The Systematicity of Second Language Learning: A Theoretical Study of the Interlanguage Hypothesis and an Experimental Investigation of Second Language Acquisition in the "Hauptschule".

Dissertation

zur

Erlangung des Grades eines Doktors

der Erziehungswissenschaften

an der

Pädagogischen Hochschule Ruhr

in

Dortmund

vorgelegt von

Laurence Kane

aus Sunderland

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Abbreviations

ATI : interaction between aptitude and treatment

IL : interlanguage

L_1 : first language

L_2 : second language

* : indicates an unacceptable utterance

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1. Introduction

This dissertation is a study of theoretical problems raised by the attempts of linguists, psychologists, and psycholinguists to describe and account for the utterances of learners of a given second language (L_2) when communication in the L_2 is attempted. Such learner utterances have been referred to as forming an interlanguage (IL), a term first used by Selinker (1969). The theoretical and experimental approach taken in this dissertation lies within the overall framework of IL studies which were initiated by Corder's (1967) paper, continued by Nemser (1971), Selinker (1972), and others, and which have been progressively modified and developed in the last decade.

One of the central assumptions, perhaps the central assumption, of IL studies has been that learner utterances form a describable and definable system which will include both deviant and non-deviant utterances (deviancy being judged by the L_2 norms). It has further been assumed that study of learner interlanguages will lead to insights into the psychological processes underlying the learning of L_2s and to more appropriate teaching methods. These latter objectives are clearly linked to the assumption of interlanguage systematicity since it would be pointless to hope for insights from learners' interlanguages if the constituent utterances turned out to be chance behavioral events which vary randomly. Accordingly, the definition and operationalization of IL systematicity must be given high priority by IL research.

In fact, the question of interlanguage systematicity has been given relatively little attention to date (see Chapter 6 for a discussion). The term "system" and its derivatives

have generally been used in a vaguely Saussurean sense. The present dissertation is intended as a contribution to the theoretical debate about the nature of interlanguage systematicity. The empirical research presented in Chapter 10 is also an attempt to contribute to this theoretical debate. Of necessity this research takes place within a limited linguistic context and cannot claim general validity.

In a later chapter (Chapter 6) it will be argued that the individual learner should be the primary unit of interlanguage research. In Section 10.5., therefore, interlanguage systematicity is defined as "the consistent, non-random use of definable sets of interlanguage structures by individual learners at one point in time". The empirical section also discusses the related question of individual learner consistency in the use of interlanguage structures over shorter and longer periods of time - interlanguage stability. Clearly, many factors may influence IL systematicity and stability. Individual differences in age, intelligence, sex, or in level of achievement in the L_2 may cause individual variation in the use of the IL. Equally, interference from the first language (L_1), or from material already learnt in the L_2, or interference resulting from complex interrelationships between the L_1 and the L_2 may be responsible for variation in IL systematicity. A theoretical discussion of the effect of individual differences on learners' ILs is given in Chapter 6, and an empirical analysis is given in Section 10.8. The effects of L_1 and L_2 interference are discussed theoretically in Chapter 3, while an experimental analysis is given in Section 10.9. The list of factors which may affect IL systematicity could be extended further. In particular, it might be suspected that variations in teaching method and/or in teaching materials will be significant factors.

The main purposes of this dissertation may, then, be summarized as follows:

1. To test the validity of the hypothesis of IL systematicity;
2. Assuming that learners` ILs can be shown to be systematic, to test the effect of $L_1$ and $L_2$ interference and of individual differences between learners on variation within learners` systems.

In spite of the potential promise of IL research as a method of optimizing L_2 learning and teaching, it would be misguided to apply the results of IL research to date to practical purposes without exercising great caution. Postal`s (1971) description of grammatical investigation applies with even more force to IL research:

> My position is that serious grammatical investigation at the moment is rather like traveling in quicksand. There are no firm supports. Every step is uncertain. Every move is questionable. There are no well-worked-out, unshakable analyses of particular portions of individual languages from which the general principles ... can be inferred. There are few well-supported, substantively detailed general principles ... that can serve as a guide in the analysis of particular cases. (p. 3)

At present IL research can offer language teaching fragmentary, provisional insights, but no firm foundation, particularly since the central problem of systematicity has not yet been resolved.

One reason for the fragmentary nature of IL research is its relatively recent development. A more fundamental problem, however, is that IL research is a point of intersection for a number of other disciplines, the most important of which can be seen as: (a) the psychology of L_2 learning, (b) the psycholinguistics of L_2 production, (c) descriptive linguistics, (d) contrastive linguistics, (e) error analysis, (f) child first language (L_1) acquisition, and (g) testing theory. Given this complexitiy, it is hardly surprising that different emphases and methods have developed. For example, researchers associated with the Ontario Institute of Education (e.g. Naiman, 1974; Swain, 1976) have been influenced by research into child L_1 acquisition, and have adopted some of its research methods, while researchers in East Europe (e.g. Filipovic, 1974; Slama-Cazacu, 1976 a; Slama-Cazacu & Doca, 1976) have developed more traditional quantative methods of error analysis. As a result of such differences in emphasis the comparability of different investigations is often difficult to assess.

The potential pedagogical consequences of the central IL hypotheses suggest that the ongoing IL research will continue in spite of the problems involved in interdisciplinary research and the "elusiveness" (Ickenroth, 1975) of interlanguage. The present work is a modest attempt to capture the elusive quality of interlanguages.

2. Interlanguage Theory and its Origins

The development of contrastive analysis and error analysis during the fifties and sixties, and the emergence of the IL hypothesis in the late sixties are closely linked. Error analysis has been seen as an instrument for validating the predictions of contrastive analysis, and contrastive analysis has been viewed as an instrument for classifying and describing learner errors (see Ghadessy, 1976, p. 245 ff. for a discussion; cf. Johansson, 1975 a, 1975 b). The IL hypothesis provides a bridge between error analysis and the psychology of L_2 learning and gives error analysis a theoretical framework which had been missing until recently. The following sections review the characteristics of contrastive analysis, error analysis, and the IL hypothesis as reflected in the literature.

2.1. Contrastive Analysis

The aim of contrastive analysis "to provide a comparative description of pairs or groups of languages" (Rusiecki, 1976, p. 12) is clearly relevant to IL research. Krzeszowski (1976, p. 107) distinguishes between classical contrastive linguistics and transformational contrastive linguistics. Classical contrastive linguistics, which is taxonomic in character, can be divided into three subtypes: (a) those comparing subsystems of different languages, (b) those comparing constructions, and (c) those comparing the operation of transformational rules. Krzeszowski proposes a transformational contrastive analysis in which semantically equivalent sentences from the L_1 and L_2 operate as inputs

(see Van Buren 1976, for a critique of this model). Examples of detailed contrastive analysis include: Agard and Di Pietro (1966 a, 1966 b), Di Pietro (1971), Kufner (1962, 1971), Stockwell and Bowen (1965), and Stockwell, Bowen and Martin (1965).

Much contrastive analysis has been written with language teaching in mind. However, since the mid-sixties the pedagogical relevance of contrastive analysis has been increasingly called into question. The debate about the usefulness of contrastive analysis for L_2 teaching and learning has centered round the following problems:

1. The early proponents of contrastive analysis seemed to suggest that the most important factor in L_2 learning will be the influence of the L_1 (see Section 3.4.). Contrastive analysis ignored the occurrence of intralingual transfer (see Section 3.5.). It is difficult to find quotations which suggest that the early contrastive analysts regarded the L_1 as the sole source of language error, but they were more interested in the possibility of interlingual transfer than in that of intralingual error (cf. James, 1971, p. 54 ff. for a discussion).

2. On the basis of contrastive analysis linguists claimed to be able to predict patterns of difficulty in L_2 learning; Lado (1957) has formulated this claim in an oft-quoted passage:

> the plan of the book rests on the assumption that we can predict and describe the patterns that will cause difficulty, and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student. (p. vii)

The principle guiding the prediction of difficulty was to be that of similarity:

> Those elements that are similar to his the student`s native language will be simple for him, and those elements that are different will be difficult. (p. vii)

The claims of this strong version of contrastive analysis were discredited on two grounds. Later and more sophisticated models which claimed to predict hierachies of difficulty on the basis of L_1 and L_2 similarity patterns were not validated by subsequent empirical research (the model can be found in Stockwell, Bowen and Martin (1965, p. 282 ff.); attempted empirical validations include: Brière (1968), Tran-Thi-Chau (1975)). More importantly, it became obvious from error counts and field observation that many errors could not be explained as interlingual types, and could therefore scarcely be predicted by contrastive analysis. The strong claim of contrastive analysis has in recent years been replaced by a more modest claim to explanatory adequacy in the analysis of learner utterances (cf. Lado, 1972, p. 15; Nehls, 1974, p. 206).

3. Contrastive analysis has been criticized because it neglects the psychological, pragmalinguistic, and sociolinguistic context of the speech act. As Slama-Cazacu (1976 b) puts it: "Kontrastive Analyse operiert de facto auf der abstrakteren Ebene der Sprache und nicht auf der konkreteren Ebene des Sprechens" (p. 192; cf. Bausch & Raabe, 1976, p. 422; Nemser & Slama-Cazacu, 1970, p.111). It must be correct to incorporate these and other elements into a theory of L_2 competence. However, it would be

confusing to call this theory "contrastive analysis", a term which is best restricted to its weaker sense so as to be able to distinguish between linguistic and psychological explanations of behavior (cf. Section 3. 1.).

4. Contrastive analysis has been criticized because it fails to take the dynamism of the L_2 learning process into consideration (Bausch & Raabe, 1976, p. 422; Nemser & Slama-Cazacu, 1970, p. 112; Raabe, 1974, p. 28). Contrastive analysis implies a static model of language learning in which the structures of the L_2 are acquired either in a "blinding flash" or not at all (cf. Nemser & Slama-Cazacu, 1970, p. 112). Like the preceding criticism, this point implies that contrastive analysis should be complemented by a theory of L_2 acquisition and production.

The development of the IL hypothesis is marked by the attempt to develop a theory which meets these objections. Characteristics of IL theory which can be seen as incorporating these points include: (a) the rejection of simplistic models of interlingual transfer (see Section 3.4.), (b) the rejection of the idea that learner ILs are predictable (Tarone, Frauenfelder & Selinker, 1976, p. 96), (c) the attempt to do justice to learner psychology and to learner individual differences (see Chapter 3. and 6.), and (d) the attempt to develop a dynamic model of IL acquisition (see Section 2.3.). IL theory is a successor to contrastive analysis in that it seeks to develop ways of overcoming its inadequacies.

2.2. Error Analysis

Error analysis is the collection, classification, and analysis of deviant learner L_2 utterances (oral or written) (cf. Nickel, 1972, p. 11 ff.). IL research must also follow a similar procedure, except that non-deviant utterances will also be collected in order to be able to describe the learner's competence as a whole. Thus IL research may be regarded as a variant of error analysis. The difference is that IL research has a theoretical framework, whereas much traditional error analysis has been untrammeled by theoretical preconceptions. It is possible to carry out an error analysis which does not lie within the IL framework, whereas IL research cannot be carried out without error analysis. However, since the development of the IL hypothesis much research which carries the label "error analysis" has been influenced both in design and analysis by IL research (e.g. Kielhöfer, 1975), so it possible with Strevens (1971) to speak of two types of error analysis; the first type is:

> In an informal sense ... as old as language teaching. The teacher needs to know as he proceeds with his instruction the extent to which that which he is teaching is being learned. Good teaching, therefore, demands of the teacher that he should continually monitor and assess the performance of his pupils in understanding and using those points of the foreign language that he has just taught ... the evidence for the teacher that particular points have not been learned, or that points previously learned have been forgotten,

> consists solely of errors, or rather of the nature, frequency and distribution of errors among otherwise error-free performance in the foreign language. (p. 1)

This type of error analysis is carried out outside the framework of the IL theory. Such traditional error analyses often consist of classified lists of errors, sometimes with an indication of the frequency of the types. Examples include: French, 1949; Fitikides, 1967; Herms, 1967. The second type of error analysis is characterized by the assumption that errors are to be regarded as "normal and inevitable features of learning":

> Now suppose that errors were ... regarded as normal and inevitable features of learning; suppose, further, that a regular pattern of types of error could be observed in the performance of all learners in a given situation; and suppose, finally, that the progression of a learner through the regular patterns of errors of his learning situation could be taken as evidence not of his failures and shortcomings, but of his success and achievement in learning. Given these suppositions, the function of error analysis is totally changed. (p. 4)

This type of error analysis lies within the framework of the IL hypothesis. Whereas traditional error analysis seeks to provide the teacher with feedback of immediate relevance, the second type also pursues the more general aim of establishing patterns of language learning.

Taxonomies of error analysis generally reveal their practical orientation. Nickel (1972, p. 11 ff.) distinguishes three main fields of error analysis: (a) description (Fehlerbeschreibung), (b) grading (Fehlerbewertung), and (c) therapy (Fehlertherapie). In a more elaborate analysis Rossipal (1972, cit. Hammarberg, 1973, p. 29) distinguishes between: (a) types of errors, (b) frequency of errors, (c) points of difficulty in the target language, (d) cause of errors, (e) degree of disturbance caused by errors (from the point of view of communication and norm, respectively), and (f) therapy (how teaching should be arranged so as to eliminate the error).

Hammarberg, however, points out that the interests of error analysis range from the practical to the theoretical. He cites Rossipal as listing the following theoretical areas where error analysis has a role to play: (a) contrastive language description, prediction of potential interference, (b) improving the description of the target language, (c) describing general traits of linguistic errors, (d) describing linguistic universals, and (e) improving language teaching. A further point may be added to this list: the task of confirming or disconfirming the predictions of contrastive analysis (cf. Filipovic, 1974, p. 51).

In recent years the loss of prestige suffered by contrastive analysis has led to increasing interest in error analysis. Extensive bibliographies are available in Corder (1975) and in Palmberg (1976). Lists of errors and empirical analysis include: Bhatia (1974), Burt and Kiparsky (1972), Buteau (1970), Legenhausen (1975), Steinbach (1977). Theoretical statements include: Burt (1975), Hellinger (1975), Strevens (1971). These lists are not intended to be exhaustive;

they indicate the variety of approaches presently available.

In spite of this upsurge of interest, critical voices have made themselves heard (Bell, 1974; James, 1971, 1974). One of the most important points in Bell's attack on the use of error analysis is that the instability and unsystematicity of errors makes it impossible to use error analysis in the ways intended by its advocates. This would suggest that the further development of error analysis as a whole will depend on the verification of the IL hypothesis that learners' L_2 utterances are systematic.

2.3. Characteristics of the Interlanguage Theory

The years between 1967 and 1973 are a formative period in the development of the IL hypothesis. The start of this period is Corder's (1967) seminal paper which views at least some of the errors made by learners as systematic. In a later essay (1971) Corder stresses the uniqueness and idiosyncracy of learners' L_2 systems. Other influential papers were Nemser's and Slama-Cazacu's discussions of "approximative systems" (Nemser, 1971; Nemser & Slama-Cazacu, 1970), and Selinker's (1969, 1972) discussion of learner "interlanguages". The termini used to refer to ILs are various, both during this period and later. The use of different termini sometimes implied different theoretical positions. Termini not mentioned so far include: transitional competence (Corder, 1967), idiosyncratic dialect (Corder, 1973), Interimssprache (Raabe, 1974), compétence intermédiaire (Py, 1975). In literature written in English and American the term interlanguage has gained the upper hand (cf. its recent use by Corder, 1976), and, in spite of some reservations

discussed in Section 2.3.1., is therefore used here.

This formative period has been followed by a period in which IL theory has been developed (cf. Raabe, 1974) and in which attempts have been made to operationalize basic concepts (e.g. in Selinker, Swain & Dumas, 1975; Tarone et al., 1976).

In the following an attempt is made to isolate the most important elements these papers have in common. Some of these themes are treated in greater detail in later chapters.

1. Theoretical statements of the IL hypothesis have generally emphasized the role of the learner as a creative agent in the L_2 learning process (Corder, 1967, p. 164, 1976, p. 21). The evidence for this creativity has been taken from a number of different sources. The use of generalization strategies in intralingual transfer has been seen as a form of creativity (Slama-Cazacu, 1976 a, p.277; cf. Section 3.5.). L_2 acquisition has also been seen as a form of hypothesis testing (Corder, 1976, p. 21; Levelt, 1975 a). Such a highly cognitive view of L_2 acquisition implies a large degree of learner self-determination. Finally, L_2 acquisition has been viewed as restricted by, or even determined by, "latent psychological structures" (Selinker, 1972, p. 212). Corder (1967, p. 166) has spoken of a "built-in syllabus" which controls L_2 learning. Latent psychological structures in L_2 learning has been postulated by analogy with the innate constraints which seem to exist in L_1 acquisition (cf. Brown, R., 1976). The case for such constraints in L_2 learning has not as yet been conclusively demonstrated (see Section 5.5.).

The IL emphasis on the importance of the learner as a creative agent has been in line with developments in

language teaching. Disillusionment with the teacher-centredness of the dominant L_2 teaching ideology of the sixties, audio-lingualism, led to a renewed interest in individualized and group-oriented methods of instruction (e.g. Disick & Valette, 1972; Philips, 1974; Schwerdtfeger, 1977). The new methods have generally been justified on the pragmatic grounds that student motivation is increased. Validation of the IL hypothesis would provide a psychological rationale for increased learner emphasis in L_2 teaching.

The focus of IL research on the learner has meant that little attention has been paid to the role of input and presentation in the formation of interlanguages; this lack of interest contrasts with tendency in the fifties and early sixties to carry out teacher-centered research (e.g. Smith, 1970).

2. A central theme of the IL hypothesis, to be found in all major statements of IL theory, is that the learner`s $L_2$ utterances, and, in particular, the learner`s L_2 errors can be shown to form systematic and/or stable patterns. Corder`s (1967, p. 166-167) distinction between non-systematic "mistakes" and systematic "errors" assumens the systematicity of ILs (cf. Section 5.2.). Nemser (1971) refers to the "patterning of errors in the perception and production of a given target language" (p. 117) as a characteristic feature of approximative systems. Selinker (1972) stresses the importance of the "regular reappearance in second language performance of linguistic phenomena which were thought to be eradicated in the performance of the learner" (p. 211) as "behavioral events" (p. 211) which may lead to the "postulation of certain theoretical constructs" (p. 211). This process of "fossilization" (Selinker, 1972, p.215)

is one form of IL stability. Recent research has attempted to operationalize the concepts of systematicity and stability (see Chapter 5).

3. One school of IL researchers has emphasized the idea that learners' language systems should be viewed as a series of stages evolving in the direction of the L_2 (Nemser, 1971, p. 116; Nemser & Slama-Cazacu, 1970, p. 119). This hypothesis of approximative learner systems has been rejected by researchers working in the tradition of Selinker's IL hypothesis. Tarone et al. (1976) see the differences in the following terms:

> An assumption held by some researchers working in the area of the organization of second-language speech – but not by the authors of this paper – is that learner's language is (a) directional in that it evolves in stages which closer and closer "approximate" the norm of the TL target language, and (b) that these stages are necessarily discrete... Note that (a) and (b) are seperable claims. These are the crucial assumptions which seperate the "interlanguage hypothesis" from the "approximative systems hypothesis" as we understand it. (p. 98)

From this it would seem that Tarone et al. regard ILs as essentially stable, while the approximative systems hypothesis views ILs as evolving dynamically. These differences in perspective may be explained by the different contexts in which the theories were to apply. In Selinker's original version of the IL theory only utterances produced by adults (learners over 12 years old; cf. Selinker, 1972, p. 210) in a meaningful context could be used as evidence for ILs. The criterion of meaningfulness excluded utterances produced in

drills. In effect, Selinker was concentrating on the acquisition of ILs in a natural setting, a setting in which strong tendencies towards fossilization and pidginization can often be observed (e.g. in the L_2s of immigrant workers, cf. Clyne, 1968). The proponents of the approximative systems hypothesis place no special emphasis on the acquisition of L_2s in a natural setting, and the institutionalized acquisition of L_2s is often marked by dynamic change, which must be accounted for by IL theory (cf. Nemser & Slama-Cazacu, 1970, p. 124).

4. The forms of learner ILs can be explained in terms of learning and production strategies. Selinker (1972) mentions five strategies: language transfer, transfer of training, strategies of second language learning, strategies of second language communication, and overgeneralization (p. 216 ff.). According to Selinker (1972)

> these processes are processes which are <u>central</u> to second language learning, and ... each process forces fossilizable material upon surface IL utterances, controlling to a very large extent the surface structure of these utterances. (p. 217)

5. Some researchers have restricted learner utterances relevant to the IL theory to those produced when attempting to express meaning (Tarone et al. 1976, p. 97; Corder 1973 a, p. 268). As pointed out above, this would involve the exclusion of learner utterances produced in certain institutionalized learning situations, e.g. in pattern practices o in imitation exercises. However, this restriction does not necessarily mean that the search for the ILs of institutionalize learners is a priori pointless. Many school exercises require the production of meaningful material, e.g. essay writting,

conversation and translation. Observation of learner behavior in such contexts, experimentation in the classroom, and psycholinguistic experimentation will all be ways of reconstructing the ILs of institutionalized learners (cf. Nemser & Slama-Cazacu, 1970, p. 24).

6. Selinker (1972, p. 210) restricted the application of the IL theory to adults (learners over the age of twelve). In this, he was following Lenneberg (1967) who postulated a critical age in language learning, beyond which the LAD (Language Acquisition Device) ceases to function. Recent research has cast doubt on the critical age hypothesis (see Smythe, Stennet & Gardner, 1975, for a discussion). Furthermore, research into child L_2 acquisition has shown that childrens' L_2 utterances are interpretable in terms of the IL theory, and are not in fact different in kind from adult L_2 utterances (Selinker et al., 1975, p. 150; Snow, 1976, p. 159). The results of recent research suggest, then, that the IL hypothesis can be applied to all age groups.

7. Some researchers have argued that individual differences between learners, e.g. in IQ, motivation, language background, may lead to observable differences in IL form, and that such differences should be incorporated into IL research design (Raabe, 1974, p. 13-14; Schumann, 1976 a, p. 15). In effect, such researchers regard IL research as a form of differential psychology (see Chapter 6).

The IL theory, in essence, asserts that learners' L_2 utterances are non-random. In the present work, therefore, the concepts of systematicity and stability are regarded as touchstones of the IL theory. The methodology of differential psychology is seen as appropriate for IL research because it

enables researchers to do full justice to the IL hypothesis claim of learner centeredness.

2.3.1. A Note on Terminology

The ascendancy of the term "interlanguage" as a description of learners` $L_2$ utterances is slightly unfortunate since the term has a number of misleading connotations. It suggests that learner utterances have a sociocultural context similar to that of natural languages. Furthermore, the morpheme inter in interlanguage suggests that the surface structure of learners` utterances is composed more or less equally of structures taken from the L_1 and L_2, while the morpheme language suggests that interlanguages have linguistic properties similar to those of natural languages. The formal characteristics of ILs are discussed in Chapter 3 and Chapter 5. Anticipating this discussion, it may be said that in institutionalized learning situations ILs are generally far closer to the surface structure of the L_2 than to that of the L_1, (for a discussion of the term "interlanguage" see Corder, 1976, p. 12).

The sociocultural context of ILs is radically different from that of natural languages. If pidgins and creoles are regarded as natural languages, which they probably should be, then interlanguages are rarely the only linguistic means of communication available to individuals within a community. The range of social contexts in which an interlanguage is actually used is often severely limited: when shopping in a foreign country, as an immigrant worker on the factory floor, as an L_2 learner in the classroom. Often ILs are used when the social status of the participants is asymmetrical;

interactions between pupils and teacher or between immigrant workers and nationals of the host country. The use of ILs may well be associated with feelings of social inferiority and stress arising from fear of failure (cf. Schumann, 1975, p. 212). Subjective feeling of success and pride in learning an L_2 are generally achieved in the teeth of negative sociocultural and interactional aspects of L_2 acquisition and interlanguage use. Almost inevitably, the sociocultural and interactional contexts of ILs will be impoverished. It has been argued that the term interlanguage should not be regarded as having the same connotations as language. In spite of its being a slight misnomer the term is retained here in order to conform to recent practice. Its use here does not imply acceptance of its misleading overtones.

2.3.2. The Heuristic Function of Interlanguage Theory

Even if the basic premises of IL theory are shown to be false, it is still be possible to claim that by clarifying some of the basic problems of L_2 acquisition and by attempting to investigate these problems empirically IL theory and research increases our understanding of L_2 learning. In this sense IL theory has a heuristic function.

3. Psychological Process and Interlanguage Form

3.1. The Process/Product Distinction

IL researchers have noted that "L_2 learners' attempts to express meaning in a second language will sometimes deviate - or differ - from "generally accepted native-speaker norms"" (Brown, D.H., 1976, p. 136). Selinker et al. (1975, p. 140) give this description of L_2 utterances:

> ... second language speech rarely conforms to what one expects native speakers of the TL to produce, ... it is not an exact translation of the NL, ... it differs from the TL in systematic ways, ... the forms of utterances are not random. (p. 140)

This chapter gives an account of some of the most discussed formal characteristics of ILs and discusses some of the psychological processes which have been postulated to explain them.

Investigators into ILs have frequently commented on the problem of reconstructing the psychological processes which have led to a particular IL form. Additional confusion has been caused by using one term, e.g. interference, to refer to both the IL form and the underlying psychological process. Dulay and Burt (1974 c) have placed considerable emphasis on their process/product distinction: "The level of product describes the actual goof .... The level of process... accounts for the product..." (p. 96) (cf. Clyne, 1975, p. 16). Although this distinction is value, it does not solve the basic problem of whether it is theoretically possible to reconstruct psychological processes from learner utterances. Selinker (1972) suggests that the problem may not always be soluble:

> The first problem we wish to deal with is: can we always unambiguously identify which of these psychological processes is to be attributable to? Most probably not. It has frequently been observed that this situation is quite common in psychology.... In our case, we may not know whether a particular IL concatenation is a result of language transfer, of transfer of training or, perhaps, of both. But this limitation need not deter us, even if we cannot always sort things out absolutely. (p. 221)

This pragmatic attitude seems to be shared by most other researchers in the field, judging by their willingness to hypothesize psychological processes on the basis of linguistic form (see Section 3.4.).

No unified, satisfactory description of the psychological processes shaping IL forms is as yet available. This unsatisfactory state of affairs is a reflection of the complexity of the L_2 acquisition task. Accounts of L_2 acquisition have been given in both behavioristic and cognitive terms. Since Selinker's (1972) article increasing emphasis has been placed on the use of strategies by learners (cf. Hosenfeld, 1975; Kane & Lukowski, 1977; Kellermann, 1976; Rubin, 1975; Stern, 1975).

In the view taken here an adequate theory of L_2 acquisition should contain behavioristic and cognitive elements. Such a theory would account for learner use of automated and semi-automated subroutines and show how such routines arise. The automization of the subroutines could be explained by a skill learning theory (cf. Fitts & Posner, 1967; Jordens, 1977, p. 15; Levelt, 1975 a, p. 97 ff., 1975 b, p. 6 ff.).

The actual acquisition of the subroutines could be explained by learners` use of strategies.

Kane and Lukowski have distinguished between micro-strategies and macrostrategies (1977, p. 103). Macrostrategies control the L_2 acquisition process as a whole, while microstrategies control the acquisition of specific IL forms. Examples of microstrategies include transfer of L_1 and inappropriate L_2 elements into the IL; risk taking strategies; avoidance strategies. It has been argued that it is illegitimate to use a term with strong behavioral overtones such as "transfer" in a cognitive context implied by the term "strategy" (James, 1977, p. 154). Nevertheless the available literature (see above) would suggest that learners are aware of these strategies, and can control them to some extent. The relationship of these strategies to the so-called "ignorance theory" is discussed in Section 3.7.

3.2. Skill Learning and L_2 Acquisition

De Cecco (1968, p. 277) lists three defining characteristics of the concept skill: "It represents a chain of motor responses; it involves the coordination of hand and eye movements; and it requires the organization of chains into complex response patterns" (p. 277). The final characteristic, the organization of chains into complex response patterns, is particularly pertinent to L_2 learning, where previously learned material must often be incorporated into larger patterns (cf. Gal`perins` Theorie der geistigen Handlungen described in Leont`ev, 1974, pp. 55-57). De Cecco describes the organization process as follows:

> ... you can view skilled behavior as the organization of S-R chains into larger response patterns .... We sometimes describe the S-R chains which constitute the large response patterns as subtasks or subroutines. Each of these subroutines represents one or more response chains. Considerable evidence shows that the chains which make up complex human skills are hierarchically organized into larger response patterns; we must learn particular S-R units and S-R chains before learning others, and we must learn all the subordinate chains before we can perform a particular skill. (p. 278)

Learning psychologists have also suggested the subroutines should be seen as moving through different stages of automatization. Fitts (1962, cit. De Cecco, 1968, p. 282) identifies three phases in the learning of a skill: the cognitive phase, the fixation phase, and the autonomous phase (1962, cit. De Cecco, 1968, p. 282). The phases overlap, and moving from one to another is a continuous and not a discontinuous process (De Cecco, 1968, p. 282). In the cognitive phase the students attempt to achieve an intellectual grasp of the target skills. The fixation phase is a practice phase in which errors are gradually reduced. In the autonomous phase the student becomes increasingly resistant to stress and to the interference of outside activities; the performance of the skill is "involuntary", "inflexible" and "locked in" (De Cecco, 1968, p. 283).

A number of reasons for the use of a skills model in IL and L_2 acquisition research can be put forward.

1. A considerable degree of automization is needed by L_2 speakers in order to free their attention for higher level activities. The skills model offers an explanation for the

development of automatized structures. Levelt (1975 b) makes the following point:

> One of the major characteristics of skill is automation of lower level activities so that attention is kept available for the slow high level decisions (such as selecting topics of discussion, making particular lexical choices, etc.). But if low level activities are not fully automated, perfect performance may nevertheless result if there is sufficient spare capacity left to control a low level activity by attention. (Levelt, 1975 b, p. 17, cit. Jordens, 1977, p. 16)

2. The skill model can explain fossilizations as automatized subroutines. The existence of fossilizations need no longer be regarded as a curiosity; rather they are the inevitable consequence of a learning process which maximizes automatization.

3. The phases of skill learning proposed by Fitts (1962, cit. De Cecco, 1968, p. 282) have an approximate similarity to the stages proposed by Corder (1973 a, p. 271 ff.; see Section 5.1.). The skill phases also imply a progress towards mastery, an idea which fits well to the approximative systems proposed by Nemser (1971, p. 116) and by Nemser and Slama-Cazacu (1970, p. 119).

An alternative to the skills approach, with its implications of a gradual development of mastery, could be the all-or-nothing hypothesis (see Heuer, 1976, p. 59 for a review of the relevant literature). According to this latter hypothesis, learners will either acquire all of a complex structure or none of it. This hypothesis might explain the acquisition of some relatively simple structures or the learning strategies of slow learners.

3.3. Language Learning Strategies

The term strategy, though frequently used in the literature, has proved difficult to define. Selinker (1972) was aware of the diffuseness of the term:

> Concerning the notion "strategy" little is known in psychology about what constitutes a strategy; and a viable definition of it does not seem possible at present. Even less is known about strategies which learners of a second language use in their attempt to master a TL and express meanings in it. (p. 219)

In general, the element of consciousness associated with the term strategy has been emphasized. Kellermann (1977), for instance, defines a strategy as "a well-organised approach to a problem." (p. 93). Jordens (1977) adopts a pragmatic approach to their definition: "whenever problems have to be solved, strategies are used to solve these problems as quickly as possible" (p. 14), as do Kane and Lukowski (1977): "Für jeden Lerner ist es unerläßlich, Methoden zu entwickeln, die eine arbeitsökonomische und rationelle Bewältigung des neuen Stoffes ermöglichen, und die immer wieder einsetzbar sind." (p.2.). Jordens (1977, p.15) and James (1977, p. 154) reject to a large extent the extension of strategy to cover transfer from the L_1 and L_2. Jordens' argument that most transfer-type errors will be automatized subroutines is probably true, but does not explain the origins of the subroutines.

In the view taken here strategies are viewed as those language learning processes which are available to the learner's introspection, and which can be manipulated by him. However, when using a strategy, the learner is not necessarily

aware that he is doing so. Jordens (1977, p. 14) may well be correct in claiming that the use of a strategy is triggered by the need to cope with problematical situations such as using unfamiliar tense forms, expressing complicated meaning and the like. Transfer of material from the L_1 and L_2 is also a strategy, although it will usually be below the threshold of consciousness.

3.3.1. The Psychological Theory of Transfer and Interference

Transfer has been defined as "die Übertragung des Lernresultates R, das in der Lernsituation A gewonnen wurde, auf eine spätere oder neue Lernsituation A^1 in der Weise, daß zur Lösung der Situation A^1 neues Lernen "teilweise oder vollständig" unnötig wird"(Schneider, 1973, p. 13). Schneider identifies the following conditions for the occurrence of transfer:

> (a) daß, eine minimale Äquivalenz zwischen Lernsituation (Problemsituation) A^1 und A gegeben ist.
> (b) daß die Person, die ein Lernresultat aktualisiert, subjektiv die Äquivalenz erkennt, erkennen will, oder zu erkennen glaubt. In inhaltlicher Hinsicht ist Äquivalenz also weitgehend subjektiv, zufällig und (für die Sache selbst) unwesentlich. "Charakter" und "Gerichtetheit" der betreffenden Person sind ausschlaggebend. (p. 13)

Schneider's emphasis on the subjectivity of equivalent situations is controversial. The application of the transfer concept to L_2 learning has generally been characterized by the search for "objective" equivalents.

A transfer strategy may result in successful or unsuccessful learning. Successful learning is an instance of positive transfer while unsuccessful learning is an instance of negative transfer or interference.

Interference has been defined as the "competition of old and new responses which results in forgetting" (De Cecco, 1968, p. 351). Interference can also be viewed as the inhibiting effect of associations from earlier or later learning. Retroactive interference is caused by associations from later learning, and can be illustrated with the following experimental paradigm often used in verbal learning:

Experimental Group	Learn list A	Learn list B	Test list A
Control Group	Learn list A	.....	Test list A

It is expected that the retention of list A will show retroactive effects from list B when the experimental group is tested. The test of the control group should show no such effects.

Interference resulting from learning which has taken place earlier in time is called proactive interference, and can be illustrated with the following experimental design:

Experimental Group	Learn list A	Learn list B	Test list B
Control Group	.....	Learn list B	Test list B

In this design the retention of list B by the experimental group is affected by the previously learnt list A. The source of inhibition has shifted from later to earlier learning.

Much early research stressed the importance of retroactive inhibition as a source of forgetting (De Cecco, 1968, p. 353). Recent research has, however, tended to see proactive inhibition as the major cause of forgetting. The following explanation is offered by Underwood (1964; cit. De Cecco, 1968, p. 353):

> Assume that a student, ten years of age, learns a given task, and the retention of this task is tested one month later. The fact that proactive inhibition is assigned a major role in the cause of forgetting is based on the assumption that, during the first ten years of the student's life, he will have acquired more habits that will interfere with the task to be recalled than he will acquire during the one-month interval between the learning and the retention test. (p. 146)

Previously acquired knowledge has a facilitating, but also an inhibiting effect on the acquisition of new patterns of behavior, and it is to be expected that the cumulative weight of experience prior to the learning of a new task is more important than the learning which takes place after the task. This argument provides a case of a priori plausibility for the assumption that the forms of the L_1 have a significant influence on the acquisition of the L_2.

Two forms of proactive inhibition play an important role in L_2 learning: interference from the L_1 ("interlingual interference") and interference from previously learned material in the L_2 ("intralingual interference"). Interference from an L_3 or an L_4 may also occur. Retroactive interference may take the form of inhibition from subsequently acquired L_2 material or from a subsequently acquired L_3 or L_4.

3.3.2. Other Strategy Types

Other strategy types have as yet had little empirical research devoted to them. Strategies which have been discussed in the literature include: strategies of communication (Selinker, 1972; Tarone et al., 1976, p. 129); strategies of language learning (Bouton, 1969; Hosenfeld, 1975; Kane & Lukowski, 1977; Kellerman, 1976; Schachter, Tyson & Diffley, 1976; Stern, 1975), and macrostrategies (Carroll, 1974; Kane & Lukowski, 1977).

3.4. Transfer and Interference in L_2 Learning

The terminology and psychological concepts of transfer theory have been further developed by researchers into bilingualism and L_2 acquisition (for approaches to interference from a bilingual viewpoint see Clyne, 1975; Haugen, 1954; Weinreich, 1953; for approaches from a L_2 acquisition viewpoint see Burgschmidt and Götz, 1974, Chapter 4; Czochralski, 1971; Debyser, 1970; Carroll, 1968; Dulay and Burt, 1974 a, 1974 c; Hasselmo, 1969; Juhász, 1970; Köhler, 1975, p. 6-35; Lado, 1957, 1972; Rattunde, 1977; Selinker, 1969).

3.4.1. Termini in L_2 Transfer Theory

Different approaches to the problem of transfer and interference in L_2 learning led to an uneven and sometimes confusing development of the terminology (Rattunde, 1977, p. 4). Researchers often used general psychological termini

to describe specialized phenomena. Transfer was used to refer to positive transfer of L_1 elements into the L_2, while interference came to be restricted to the negative transfer of L_1 elements (cf. Juhász, 1970, p. 9; Rattunde, 1977, p. 5). This specialization of general termini obscured the distinction between superordinate and subordinate features of transfer theory, and contaminated the psychological termini with normative overtones. A product/process distinction was not always made.

In this discussion the following conventions are adopted:

1. Where necessary the product/process reference of termini is made explicit.

2. The terms transfer and generalization are used to refer to general, superordinate psychological processes.

3. The term analogy refers to the positive transfer of L_1 elements into the IL.

4. The term interference refers to the negative transfer of L_1 elements into the IL.

5. The term regularization refers to the positive transfer of L_2 and IL elements into the IL.

6. The term overgeneralization refers to the negative transfer of L_2 and IL elements into the IL.

7. The terms interlingual transfer and intralingual transfer are non-normative descriptions of L_1 and L_2 transfer respectively.

This terminological schema has the following aims: (a) to eliminate termini with overlapping reference, (b) to permit neutral, non-normative descriptions of psychological processes, (c) to permit a process/product distinction to be made, where appropriate, and (d) to conform to established practice as far as possible.

3.4.2. Substantive Problems of Interlingual Transfer

Research into interlingual transfer centers on two areas: (a) the sociolinguistic, psychological and linguistic factors controlling interlingual transfer, and (b) the effect of interlingual transfer on L_2 acquisition relative to other factors. In each case discussion has concentrated on the effect of the interference process rather than on the effect of the analogy process, probably because the effects of the interference process can be directly observed on the product level.

In order to explain the sociolinguistic context of interference Ervin and Osgood (1954) distinguished between coordinate and compound systems; in a coordinate system the L_1 and L_2 are used in different sociocultural contexts, while in a compound system they are used in the same cultural context (p. 139 - 140). Ervin and Osgood assume that the use of an L_1 and an L_2 will lead to more interference in a compound system since the two languages will be used on different occasions to refer to identical signifiés (p. 140). In practice this model functions as a theoretical framework since many instances of bilingualism are not unambiguously classifiable in terms of the theory.

More controversial has been the isolation of linguistic factors controlling interlingual transfer. Much discussion has taken place over the role of similarity between L_1 and L_2 items. In the fifties and sixties it was generally assumed that similarity would lead to analogy, whereas contrast would lead to interference (cf. Lado, 1957, p. vii). Later, more elaborate models were developed. Jakobovits (1969) attempted to apply a verbal learning model, the Osgood

transfer surface, to the problem of interlingual transfer (see Osgood, 1953, p. 530 ff.). The Osgood transfer surface explains transfer as a function of stimulus and response similarity. However, a number of researchers had reservations about applying this type of laboratory model to language learning (Carroll, 1968, p. 121; Crothers & Suppes, 1967, p. 5; Jackobovits, 1969, p. 58 ff.). The main objections have been that there are no elements in the language structures of the L_1 and L_2 which can be clearly and unambiguously labeled as stimulus and response and that the definition of similarity is vague (cf. Kielhöfer, 1975, p. 126; 1976, p. 84).

Recent research and discussion suggests that experimenters are not willing to return to the simplistic theory of interlingual transfer offered by Lado. Levelt (1975 a) expresses this unwillingness in terms of his hypothesis testing theory (p. 90). According to this model, the learner`s hypothesis space may be regarded as being restricted by factors such as language learning universals or interlingual interference. Levelt (1975 a) expresses his view of the effect of interlingual similarity in these terms:

> In terms of system theory one would suppose that the facilitatory effect of language similarity is due to the restriction of the hypothesis space that the language learner can afford ... the apparent similarity between first and second language can easily induce the learner to overrestrict his hypothesis space. This results in what is known as interference. I would not be surprised if it were shown that there exists an optimal similarity between languages; if the second language comes too close to the first, interference may predominate (p. 96).

James (1971) gives a overview of the research.

Levelt regards interference as a function of the similarity of the L_2 and L_1 systems as wholes. Other research has concentrated on investigating the effect of different degrees of contrast and similarity between corresponding L_1 and L_2 subsystems. The empirical evidence shows that both partial similarity and contrast between subsystems may cause interference (Juhász, 1970, p. 145 ff.; Kielhöfer, 1975, p. 201 ff.; Kielhöfer, 1976, p. 75 ff.).

The effect of interlingual transfer on L_2 acquisition relative to other factors is difficult to quantify. Dulay and Burt (1974 c) took a radical viewpoint by minimizing the importance of interlingual transfer. In this they have found few followers. Tran - Thi-Chau (1975, p. 135) has estimated that interference errors account for approximately half of all errors made.

3.5. Intralingual Transfer

Recent research has placed increasing emphasis on the process of intralingual transfer (often referred to as "generalization" or "overgeneralization"). This is a reaction to the previous emphasis on interlingual transfer and contrastive linguistics. Another influence has been the impact of research into child L_2 acquisition (cf. Corder, 1967; Dulay & Burt, 1973, 1974 a, 1974 b, 1974 c). In a well-known experiment Berko (1958) showed that children extend the use of the past morph /-ed/ to verb forms unknown to them. Later research has shown that children go through phases of data-gathering, hypothesis formulation, hypothesis testing, and hypothesis restriction when acquiring the

subsystems of the L_1. The acquisition of the simple past by English children can be taken as an example. The forms of the simple past are at first learnt holophrastically as unique forms. Later, children adopt the hypothesis that the regular past consists of a verb stem and a past morph /-ed/. The past morph is then, in the hypothesis testing stage, transferred both to environments where its use is appropriate (a process of "regularization" as defined in Section 3.4.1.), and to environments where its use is inappropriate (a process of "overgeneralization"). In the hypothesis restriction phase the use of the past morph is restricted to appropriate environments (Slama-Cazacu, 1976 a).

Similar processes are at work in L_2 acquisition. Jakobovitis (1969) defines generalization as:

> the use of previously available strategies in new situations .... In second language learning ... some of these strategies will prove helpful in organizing the facts about the second language, but others, perhaps due to superficial similarities, will be misleading and inapplicable. (p. 55)

Richards (1974) sees overgeneralization as:

> ... instances where the learner creates a deviant structure on the basis of his experience of other structures in the target language .... Overgeneralization generally involves the creation of one deviant structure in place of two regular structures. (p. 174)

Taylor (1975) gives a similar definition:

> a process in which a language learner uses a syntactic rule of the target language inappropriately when he attempts to generate a novel target language utterance (p. 74).

The use of a strategy of intralingual transfer leads to considerable economies in learning effort, as Slama-Cazacu (1976 a) points out:

> Das Aufstellen einer Regel auf der Grundlage bestimmter sprachlicher Kenntnisse und die produktive Anwendung dieser Regel repräsentieren eine wirkungsvolle Strategie, die zu einem schnellen Erwerb führen würden, etwa im Fall von einfachen, künstlich konstruierten Sprachen, ohne "abweichende" Fälle, ohne "Ausnahmen von der Regel". (p. 278)

Intralingual transfer resembles other, more general forms of learning:

> Gesammelte Fakten, die einander ähnlich sind, werden auf der Basis eines gleichen Kriteriums klassifiziert. Dieses aktive, selektive und systematische Gruppieren ist übrigens eine allgemeine Technik des menschlichen Gedächtnisses... (Slama-Cazacu, 1976 a, p. 277)

Intralingual transfer is a paradigmatic phenomenon, which may lead to a simplified L_2 surface structure, but which will not necessarily do so. For instance, the overgeneralization of the English suffix in the third person singular of the simple present will lead to a complexification of the L_2 surface structure. Overgeneralization, then, is only one of a number of strategies which can be postulated to explain

simplified L_2 surface structure. Other simplification strategies might include:

1. Syntagmatic redundancy reduction. This strategy omits redundant elements in syntagmatic linguistic structures. The deviant utterance John visit his aunt yesterday could be the result of omitting the past marker. From the learner's point of view this form is redundant since the adverb yesterday marks the action as past. (see George, 1972, p. 9 - 18, for a discussion of redundancy reduction).

2. Omission of non-prominent elements. The frequent omission of the English suffix -s on the third person singular of the present may be the result of learners focusing their attention on prominent elements.

3.6. Combination of Interlingual and Intralingual Processes

The Dulay and Burt process/product distinction suggests that an unambiguous identification of the psychological process underlying a linguistic form may be difficult. The problem is complicated by the possibility that both interlingual and intralingual transfer may contribute to the development of deviant IL utterances. Ickenroth (1975) illustrates the problem:

> ... the distinction between errors due to L_1 interference and L_2 overgeneralization seems to be questionable, as L_2 overgeneralization can be considered to be a special case of L_1 interference, at least in a number of cases: e.g. nous allons restons, an error made by Dutch learners of French. In Dutch the endings are the same: wij zullen blijven (interference),

> so a French ending which is "striking" for Dutch learners is overgeneralized .... On the other hand L_1 interference can be considered to be a special case of overgeneralization: if no L_2 rules are known, the only possibility a L_2 learner has is to use L_1 rules (or L_3, L_4, etc. rules). (p. 3)

Kielhöfer (1975) describes such systems as Mischsysteme:

> In diesem Mischsystem sind L_1 und L_2 Interferenzen nicht eindeutig voneinander zu unterscheiden. L_2 Interferenzen werden oft dadurch ausgelöst, daß in L_1 entsprechende Systeme und Regeln anders strukturiert sind; was zunächst wie eine L_2-Interferenz erscheint, geht ursächlich auf eine L_1-Interferenz zurück. (p. 94).

It seems likely that learners` IL subsystems consist of such compound systems (Mischsysteme) to a considerable extent (cf. Kielhöfer, 1975, p. 95; Richards, 1971, p. 17).

3.7. The Ignorance Theory

The idea has been put forward that the problem of interference can be reduced to a problem of ignorance (Newmark & Reibel, 1970, p. 247 ff.). Since then this has been intensively discussed, especially by James (1971, 1977) and Kellerman (1977). Other contributions to the debate can be found in Kielhöfer (1975, p. 85) and in Köhler (1975, p. 8). There seems to general agreement that the term ignorance is too global and ill-defined to be of much use in explaining IL behavior. The discussion does however suggest that it may be necessary to distinguish between two situations in which IL utterances can occur:

1. The learner has previously known, or has at least been exposed to the structure he is now attempting to produce. ("Exposure Model")

2. The learner has no previous knowledge of the structure he is expected to produce. ("Ignorance Model")

Weimer's definition of Irrtum and Fehler implies a similar distinction:

> Der Irrtum ist eine Abweichung von Richtigen bei der die Möglichkeit der Einsicht in das Richtige fehlt .... Der Fehler ist eine Abweichung von Richtigen, die trotz der Möglichkeit besserer Einsicht zustande kommt.(Weimer, cit. Herms, 1967, p. 84.)

It will be necessary to discover whether learners use similar strategies in these situations. Although the first situation will be of particular interest to language teachers, who will normally only require students to perform utterances they have been exposed to, nevertheless it can be expected that the ignorance model will also contribute to understanding of IL strategies (cf. James, 1977, p. 161).

4. Interlanguages and the Normative Network

IL utterances take place within an implicitly or explicitly defined L_2 normative framework (cf. Köhler, 1975, pp. 36–53 and Kielhöfer, 1975, pp. 21–60 for an approach different to that taken here). In the institutionalized setting of L_2 learning the normative network is sanctioned and applied by authorities with societal legitimation, e.g. by teachers, teacher trainers, course writers and the like. The norms selected by these authorities will be derived from those prevalent in the society of the target L_2. In natural L_2 acquisition the normative network will usually be that of the group within which the L_2 is acquired. The following discussion develops a framework within which two levels of social complexity are distinguished and which permits the identification and classification of different types of linguistic and sociolinguistic norms in the context of the target culture. The two levels of social complexity are defined as: (a) a macrosocial level which accounts for the basic social structures constraining individual behavior, and (b) a microsocial level which accounts for the interactions between individuals (Stokes & Hewitt, 1976, p. 838, discuss this dichotomy as a relationship between culture and conduct).

At a macrosocial level of analysis sociolinguistic norms assign dialects and sociolects varying degrees of prestige. Sociolinguistic norms are the products of class and regional differences. The diffusion of these norms through society allows the class membership of individuals to be recognized by others, and strengthens the individual's identification with his own class. The assignment of high prestige to some

sociolects and the stigmatization of others is a labeling process (cf. Harbach, 1976 for an account of labeling theory). Existing class divisions are stabilized and legitimized through the reification of differences in class prestige in sociolinguistic norms. However, since sociolects also become symbolic foci of individual and group identity, the speakers of stigmatized variants may develop strategies of resistance. One form of ritualized resistance consists in the persistent rejection of high status forms and the use of the stigmatized forms, which become symbolic of group solidarity. This account suggests that when course designers select the L_2 sociolinguistic norms for a group of learners, considerations of prestige should be tempered by a concern to choose norms which are as acceptable to as many members of the L_2 target culture as possible.

At the microsocial level two types of norms can be distinguished: norms of face-to-face interaction and pragmalinguistic norms. Norms of face-to-face interaction provide a framework for semi-ritualized personal encounters or for the semi-ritualized elements in such encounters (cf. Goffman, 1959, 1967, 1971). Stokes and Hewitt (1976) provide an example of the attempt to describe such norms in their work on aligning actions ("verbal efforts to restore or assure meaningful interaction in the face of problematic situations" (p. 838)).

Pragmalinguistic norms prescribe the conditions under which valid speech acts may take place (cf. Austin, 1962; Searle, 1969; Wunderlich, 1974). Such conditions (sometimes given in the form of an algorithm) may be viewed as a nexus between the semantic content of an utterance and the realizability of this content in the "real" world. Thus unless the utterance

"I pronounce thee man and wife" is spoken by a person authorized to perform marriages it is invalid as a speech act since in this case the utterance implies possession of the appropriate authority.

Finally, it is useful to be able to distinguish between the linguistic norms of a particular dialect or sociolect and the core linguistic norms. Core linguistic norms are a description of those obligatory and systematic features of the language which are not conditioned by macrosocial and microsocial factors. These core norms will consist of the set of systematic features shared by the major sociolects and dialects of a given language (cf. Quirk, Greenbaum, Leech & Svartvik, 1972, p. 6-10).

IL research can, at best, play a minor role in setting L_2 norms for learners in an institutionalized setting. The task of determining what the norms actually are falls to sociolinguists and applied linguists. The task of selecting the norms appropriate for a particular group of L_2 learners normally falls to teacher trainers and course designers who must balance the claims of conflicting criteria. Examples of the conflicts which must be resolved by course designers include: social prestige versus social neutrality, the learnability of linguistic forms versus their teachability. IL research can contribute to the process of norm setting in two ways. Firstly, it may provide insights into the effect of different norms on the L_2 acquisition process and on the formation of ILs. Secondly, IL research, after having ascertained which errors are systematic, may investigate the disruptive effect of such errors on the communicative process (cf. Olsson, 1972, 1973). This information can then

be incorporated into the norm setting process.

Much IL research has accepted the norms set by school authorities and by teachers in a particular situation as given. Errors have been defined as forms "unwanted" by the teacher (George, 1972, p.2). Theoretically, this position could lead to discrepancies in the classroom norms of a prestige sociolect considered desirable by those responsible for the curriculum. Such discrepancies are not reported in IL research. Furthermore, in order to be able to realistically describe the process of IL formation, it is necessary to accept, at least temporarily, the input to the learner as normative. This position is taken in the following discussion.

4.1. Significance of Errors

In the previous section it was suggested that learners' errors can be viewed as occurring on different levels and can be defined from various viewpoints. The classification of errors and the interpretation of their significance will depend on the researcher's intentions, hypotheses, and linguistic model. Errors may be regarded as evidence for the systematic nature of learner language (IL hypothesis), for inappropriate norm setting, for areas of difficulty within the L_2, for random behavior as the result of ignorance, for the distorting effects of institutionalized learning on the norms of face-to-face interaction, or for inadequate teaching. Clearly this list could be extended. It is difficult, then, to visualize a classification scheme having unique claims to descriptive adequacy. In the present situation classification schemes should be regarded as ad hoc constructs within a particular experimental or observational context

(cf. Debyser, 1970, Rattunde, 1977). Similarly the significance of errors must be seen in terms of the experimental situation generating the data.

4.2. The Problem of a Tertium Comparationis

It has frequently been observed that deviant learner utterances, taken by themselves, are often ambiguous in terms of proposed classification schemes. Thus a learner utterance Tom going may be seen as an error in which the auxiliary is has been omitted or as an error in which the morph ing has been substituted for the morph es. Given a scheme which classifies errors in terms of omission, addition, selection, and ordering (Corder, 1973a, p. 278), and in the absence of further information it will only be possible to assign the error to one category by making an arbitrary decision. A solution to this dilemma is only possible if a tertium comparationis can be constructed with which the learner utterance can be compared. If, for example, it can be shown that the learner intended to produce the utterance Tom is going, then a comparison of the intended utterance and of the actual utterance permits an unambiguous classification of the error, in this case as an error of omission. The following techniques might be used in order to construct a tertium comparationis: (a) the semantic content which the L_2 learner wished to convey through his erroneous utterance can be reconstructed through elicitation procedures (see Chapter 8); this information can be used to generate a correct L_2 utterance which conveys the same information and which will act as a tertium comparationis, (b) a similar

procedure can be followed when contextual clues are used to reconstruct the intended semantic content of the erroneous utterance, (c) the use of elicitation procedures to produce a data corpus permits the researcher to predict or discover how native speakers would react to particular items; the actual or idealized responses of the L_2 speakers act as a tertium comparationis for learners' IL utterances. To illustrate (c), the example of a translation elicitation procedure may be taken. Here the ideal translations of the L_1 stimuli sentences act as a control for the actual translations produced by the learners.

One possible objection to these procedures is that the description above suggests that knowing the semantic intention of a learner utterance it is possible to construct one L_2 utterance to correspond to it, whereas in fact there may be several ways of realizing a given semantic content in the surface structure. This objection is correct, but applies with most force to complex semantic structures. In the case of simple semantic contents there may be often only one L_2 surface structure equivalent. In this case it is still possible to construct an unambiguous tertium comparationis. If this argument is correct, then the lack of an unambiguous tertium comparationis is likely to be a stumbling block in the analysis of the ILs of advanced learners.

4.3. Global and Local Errors

In the following it is assumed that optimal error classification schemes permit the unambiguous assignement of errors to one category and enable statistical comparisons to be made. This task is made difficult by the hierarchical nature of language; an error classification must reflect this

hierarchy. If the English verb phrase is regarded as a succession of three elements: aux + base form + suffix, the correct formationof an English tense form will depend on the speaker choosing the appropriate constituent elements. The error classification might be carried through on two different levels: (a) a global level which merely records whether the tense has been correctly formed or not, and (b) a local level which records which constituents were correctly formed and whether the word order was appropriate. Errors on the global and local level should be classified seperately, otherwise the total error count will be unreliable. As long as the different levels are distinguished, it becomes possible to record one error from a number of different viewpoints. It seems likely that both global and local error classification will provide valuable information to teachers (cf. Burt & Kiparsky, 1972, p. 6, 1975).

5. Perspectives on Interlanguage Systematicity and Stability

In Chapter 1 the notion that learners` utterances are in some way systematic was described as the lynchpin of the interlanguage hypothesis. If learners` interlanguages are merely random or characterized to a large extent by unpredictable variability, it would be pointless to study them. In particular, if learner behavior in the production of errors turned out to be highly unpredictable and to a large extent random, then the study of errors would lose some of its interest for the researcher into L_2 acquisition.

The centrality of the systematicity concept to the interlanguage hypothesis has been recognized by a number of hostile critics. James (1974) formulates the objections to the systematicity concept als follows:

> I suggest that it is moreover epistemologically trivial to study learners` dialects in vacuo, as is revealed by an internal contradiction. On the one hand it is claimed that such dialects are systems in the Saussurean sense that "tout se tient". On the other hand it is agreed that the learner`s dialect is fluid or in flux: "It is in the nature of idiosyncratic dialects that they are normally unstable" Corder, 1971, p. 149. The question begged is: how can a system remain a system if it is in flux? (p. 8)

These arguments have been echoed by Bell (1974) and Ickenroth (1975, p. 1-2). In an empirical study designed to "determine what features of the learner`s speech could be identified as stable components ..." (Bertkua, 1974, p. 280) "little evidence" (p. 285) was found for "a systematic learner language as either group or at an individual level". Bertkua`s investigation has some methodological defects (small

population size, restricted data base and inadequate statistical evaluation), but remains one of the very few pieces of empirical research in this area.

5.1. Definitions of Systematicity and Stability

In order to overcome the apparent paradox of postulating systematicity in a dynamic process, IL researchers have attempted to clarify and operationalize the meaning of the terms systematicity and stability. Tarone et al. (1976), improving on Selinker et al. (1975), offer the following definitions:

> We call learner speech "systematic" when it evidences an internal consistency at a single point in time; we call such speech "stable" when it evidences such a consistency in the use of forms over time .... Correspondingly, speech which is not systematic at a single point in time evidences "variability", while speech which is not stable over time evidences "instability". (p. 97 ff.)

These definitions provide a useful starting point for IL research, but leave unanswered some of the questions asked by Tarone et al. at an earlier point in their paper. These questions related to such important IL research topics as: (a) the uncertain reference of the term systematic, which might have a number of meanings, including, for instance, the meaning that L_2 speech is the result of "recognizable strategies" (p. 96), (b) the uncertainty about which elements compose the system, (c) the problem of learner variability, and (d) the difficulty of deciding on a cutoff point, beyond which learner utterances can no longer be considered to

be systematic. In the following discussion approaches and solutions to these problems are presented.

To (a). The primary emphasis of IL research has been on the study of learner utterances, that is, on behavioral events (Selinker, 1972, p. 211). Systematicity has generally been taken to refer to these linguistic items. Of course, there can be no objection to deducing the existence of systematic L_2 learning strategies on the basis of interlanguage production, and this has often been attempted (Kellerman, 1976; Taylor, 1975). Nevertheless, on the basis of research to date it seems likely that IL research will continue to be most concerned with the systematicity of linguistic forms produced by learners.

To (b). Most IL researchers have restricted their attention to a limited subset of learner utterances (for examples of this see Swain, 1976; Tarone et al. 1976). It has been assumed that such linguistic subsets will be coherent and will be representative of larger IL systems. The decision about which subsets should be studied is not arbitrary, but based on the predictions of contrastive analysis, previous IL research, and considerations of statistical convenience. However, it can also be argued that the level of abstraction of the linguistic items in the subset under review is of prime importance in the design of IL research.

Systematicity can be seen as the consistent use of linguistic items or rules which form a continuum of increasing abstraction. The significance of proven systematicity for IL theory will depend partly on the abstraction level of the linguistic elements investigated. The most basic form of systematicity would be the repeated use of holophrases, e.g.

the repeated use of the holophrase didn't went. This "trivial" form of systematicity is of limited theoretical significance, though of value to teachers. A second, more abstract form of systematicity would be the consistent use of "surface" (Kegl, 1975 cit. Tarone et al., 1976, p. 99) rules such as concord, auxiliary insertion, and auxiliary deletion. When learner use of deep structures is investigated, then researchers are dealing with the most abstract type of systematicity.

These ideas may be illustrated with an example taken from Selinker et al. (1975, p. 147) and also discussed by Adjemian (1976, p. 304). The utterance in question was produced by a learner with English as an L_1. The first sentence (1 a) is the learner's deviant utterance, while the sentences (1 b) and (1 c) are, respectively, the correct French form and the English attempted meaning:

(1) a. Il veut moi de dire francais à il.

b. Elle veut que je lui parle francais.

c. She wants me to speak French to her.

The deviant utterance contains a number of mistakes irrelevant to this discussion. The underlined portion of the sentence can be interpreted as an attempt to apply a rule, namely the rule of Subject Raising to Object Position, to a verb which does not permit this transformation. The error has presumably been caused by transferring a subcategorization feature of the English wish to the French vouloir. An example of trivial systematicity would be to show that learners, or groups of learners, consistently use vouloir + Subject Raising in the data available. To achieve a higher level of abstraction or generality in the description of learner interlanguages it would be necessary to sift through the data for learner use

of French verbs with similar characteristics to vouloir (i.e. verbs not permitting Subject Raising, but with counterparts in English permitting or requiring the transformation). If it can be shown that learners make consistent mistakes throughout this verb class, the case for systematicity at a higher level of generality will have been proved (cf. Adjemian, 1976).

From a theoretical viewpoint, a convincing verification of the interlanguage hypothesis would require evidence of systematicity at both low and high abstraction levels. Considerations of statistical convenience have led much recent research to concentrate on simple linguistic systems (gender, singular/plural) which are relatively easy to quantify (cf. Swain, 1976; Tarone et al., 1976).

To (c). The problem of variability and its causes is complex. In the following discussion the approach of differential psychology (see Chapter 5) is followed. This approach suggests that not all variability can be interpreted as mere variance; at least some variability is systematic, and explicable in terms of input variables or individual differences. Six areas relevant to the discussion of IL variability can be identified: (1) group and individual reference of IL theory, (2) relationship of systematicity and stability, (3) relationship of interlanguage subsystems to each other, (4) individual differences, (5) modalities of production and reception, and (6) input and presentation variables.

Tarone et al. (1976) raise the question of whether ILs "exist in the mind of the individual learner" (p. 96) or whether they are "what groups have in common" (p. 96). The group reference of ILs has been accepted by Zydatiß (1974, p. 282), Corder (1973 a, p. 263 ff.), and Raabe

(1974, p. 14). The view taken here is that evidence of intraindividual systematicity is a necessary precondition for investigating the group reference of ILs. This view is supported by Rosansky`s (1976) critical review of empirical research into child L_2 acquisition (see Section 5.5.). Rosansky showed that treating learners as a group may lead to a neglect of individual differences and that group means may conceal considerable intraindividual variability.

The relationship of systematicity and stability is to a large extent a problem of definition. Systematicity refers to learner consistency at one point in time, while stability refers to consistency over time (Tarone et al., 1976, p. 98). As Brown, D.H. (1976, p. 137) has pointed out, the critical point in this definition is the interpretation of "over time". The period in question could conceivably be a few weeks, a few months, or a few years. The operationalization of concepts such as "at one point in time" or "over time" will have to be carried out by each researcher in the light of his objectives, the linguistic subsystems he is studying and the characteristics of his population. A further factor in the relationship between systematicity and stability is the possibility that changes over time may be systematic in character (Swain, 1976, p. 345; Taylor, 1975, p. 74).

If learners` ILs contain subsystems at different stages of systematicity, then the impression of learner variability is increased. Py (1975) gives a vivid description of the development of these subsystems:

> En fait, de même que la compétence intermédiaire est constituée d`une mosaïque de grammaires plus ou moins hétérogènes, de même elle évolue de

> manière irrégulière, plus rapidement dans certains secteurs que dans d'autres, rappelant en cela les glissements des couches géoligiques les unes sur les autres. (p. 3)

Corder (1973 a) distinguishes three stages in the development of interlanguage systematicity:

> 1. the presystematic stage, in which the learner "randomly affixes tense endings to verbs" etc.
> 2. the systematic stage, in which the L_2 learner has "begun to discover the function" of e.g. tense and aspect markings.
> 3. the post-systematic stage, in which the L_2 learner has "discovered the correct system", but is "inconsistent (for a period)" in applying the rules. (p. 271 ff. cit. in Ickenroth, 1975, p. 3 ff.)

Like Py, Corder (1973 a) emphasizes that subsystems at different stages of systematicity may coexist in the interlanguage of one learner: "... a learner is in a different stage of learning in respect of every different system of the language" (p. 271). If this view is correct, then learner variability must be studied with reference to the individual subsystems.

It can be argued that the study of individual differences such as age, sex and motivation will help to explain patterns of IL systematicity and stability (Schumann, 1976 a, p. 26). This problem will be discussed in greater detail in Chapter 5, where the factor of differences in learning achievement is given special weight as a cause of variability.

Presentation style and input data are also factors which are likely to influence the stability and systematicity of ILs. Research into the effectiveness of teaching methods has usually restricted itself to correct utterances and neglected the possible interrelationship between teaching methods and

specific types of errors. Experiments investigating the relationship between IL form and presentation style would be useful, but have not as yet been carried out. Studies of the effect of input data in child L_1 and L_2 acquisition may also contribute towards a better understanding of IL variability (see Wagner-Gough & Hatch, 1975).

To (d). More or less stringent criteria can be applied to determine the cutoff point beyond which linguistic items and rules can no longer considered to be stable or systematic. Tarone et al. (1976, p. 104) followed Brown, R. (1976, p.305) in using a 90 % criterion level. Systematicity (C) was defined as the correct use of variant x in 90 % or more of all occurrences for the obligatory context X. Only linguistic subsystems with binary characteristics (singular versus plural and masculine versus feminine in French) were permissible in the contexts chosen. An inverse form of systematicity (C) was defined as the occurrence of variant x in 10 % or less than 10 % of the time in an obligatory context.

The 90 % criterion level is a stringent one, and it can be objected that a certain amount of data is being wasted, which might be captured in variable rules (see Section 5.3.) or by alternative statistical procedures. Alternative methods of operationalizing systematicity have been employed by researchers working in the tradition of Corder's (1967) competence/performance distinction (see Section 5.2.).

Systematicity is a concept with many dimensions. Further progress in IL research will depend on exact specification of these dimensions so that empirically testable hypotheses can be formulated.

5.2. Competence and Performance

The competence/performance distinction in IL research has its origin in Chomsky's (1965) characterization of competence as the idealized speaker-listener's knowledge of the language. According to Chomsky the idealized speaker-listener is invulnerable to such performance variables as "memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge in actual performance." (p. 3).

In applying this distinction to L_2 acquisition Widdowson (1975, cit. Krzeszowski, 1976, p. 63) retained the mentalistic overtones of Chomsky's distinction by suggesting that the learner has two types of rules: (a) reference rules, which constitute the learner's actual knowledge of the language, and (b) expression rules, which control his actual performance.

Corder's (1967, p. 167) distinction between "errors" and "mistakes" is not so dualistic as Widdowson's dichotomy; according to Corder errors of competence ("errors") are defined by their systematicity while errors of performance ("mistakes") are defined by their lack of systematicity, and are said to be caused by such psychological factors as "tiredness" and "strong emotion" (p. 166). Corder seems to imply that these factors are a necessary and sufficient explanation of IL variability, a view which has been challenged (Kellerman, 1976). The effect of Corder's psychological variables is to obscure the possibility of a behavioral and empirical approach to the definition of systematic and non-systematic errors.

Corder's distinction has been influential in recent research for two main reasons. Firstly, Corder's category "mistake" is similar to the kind of error which has

been called a "careless mistake" ("Flüchtigkeitsfehler") (Nickel, 1972, p. 16 ff.). It has been recognized that the treatment of this kind of error in the classroom should differ from that provided for other, more persistent kinds of error (Herms, 1967, p. 79; Nickel, 1972, p. 16 ff.). The similarity of Corder's mistakes to the category careless mistakes suggests that the competence/performance distinction should have a direct application in the language teaching classroom. Secondly, Corder provided an operationalizable criterion to distinguish between "errors" and "mistakes": "we ... can correct them mistakes with more or less assurance" (p. 24).

The principle of author correctability has been used in a number of empirical studies (e.g. Kielhöfer, 1975). The usual method has been to ask learners to give intuitional judgements about errors they have made. Author correctability is a possible method of realizing the "elicitation cycle" proposed by Zydatiß (1974 b, p. 286) and Corder (1973 b, p. 42).

The identification of performance errors on the basis of author correctability has been criticized by Kellerman (1976, p. 82 ff.). Kellerman makes the following points: (a) learners correcting their own texts may easily overlook their own mistakes, (b) author correctability will not help researchers to determine cases where the learner is hesitating between two competing forms, and (c) if the learner replaces a correct form with an erroneous form, or replaces an erroneous form with an erroneous form, the theoretical status of the first mentioned form will be unclear. Objection (a) can be met by using a different format to confront learners with their

mistakes in a different context. Objection (b) can be met by extending the data base so that learner hesitation between competing forms becomes quantifiable. Objection (c) may apply to Corder's theory in its 1967 form and the more elaborate 1973 version, but can be overcome by extending the theory to cover cases of the kind mentioned by Kellerman, and by removing psychologizing elements from the theory.

The use of author correctability may well turn out to be a legitimate way of measuring IL systematicity, though it will be necessary to cross-validate this technique with other measures of systematicity.

5.3. Variable Rules

In order to achieve more accurate description of variation in nonstandard and idiosyncratic dialects statistical rules have been developed which incorporate measurements of variation. Such rules have been called variable rules (see Cedergren & Sankoff, 1973; Labov, 1972, 1975). According to Labov (1972) two major parameters govern the application of such rules:

> First is an input variable which sets the overall frequency with which the rule is selected. Secondly there are variable constraints which differentiate the frequencies with which the rule applies according to the syntactic and phonological features of the environment. (p. 89)

In the study of Black English Vernacular (BEV) such rules have been used to describe syntactic phenomena such as the deletion of the copula in such phrases as He ready and to

describe such phonological phenomena as the omission of stops in the past tense of BEV speakers (Labov, 1972). The group factor social class may also enter into such rules as a parameter.

Variable rules make a performance/competence distinction redundant (see Section 5.2.) by displaying all available data. Furthermore, such rules can be used to display the effect of the linguistic context on the forms investigated. The effect of linguistic context on the variability of items has rarely been discussed in IL research. These advantages suggest that variable rules could be profitably used in IL research.

In a pioneering article Dickerson (1975) used variable rules to show that the production of an English phonological feature, /z/, varied according to its linguistic environment, and that systematic differences between environments were maintained even when the learners made an across-the-board improvement in the production of the target sounds. Studies of IL syntactic phenomena using variable rules are not as yet available.

5.4. Research into Social Dialects

Recent research into idiosyncratic and social dialects shows that these fields have several problems in common with IL research. Central themes of IL research such as the variabilit of linguistic subsystems, elicitation techniques and quantative methodology have been discussed by sociolinguists (cf. Dittmar 1973, p. 160–295; Labov, 1975). In this section the relevance of research into idiosyncratic and social dialects for IL systematicity is discussed.

The term idiosyncratic dialect has been used to refer to the quantifier and cross-over dialects identified by Carden (1970) and others. In contrast to sociolects, these idiolects show "no predictable social distribution" (Labov, 1975, p. 18). To demonstrate the existence of these idiolects, elicitation techniques and statistical procedures, e.g. implicational scales, have been employed. In a review of the literature Labov (1975) showed that the existence of such idiolects can be called into question, and concluded that: "consistency among speakers of similar backgrounds" is a vital matter in distinguishing genuine dialects from artefacts of elicitation" (p. 24). The difficulties in establishing the existence of idiosyncratic dialects are an indication of the extent of the problem facing researchers wishing to establish the systematicity of ILs.

In a discussion of the status of BEV Labov (1970) emphasizes its systematicity: "... there is however a great deal that we can do to show the internal relations in the nonstandard dialect as a system" (p. 12). At the same time he points out that:

> ... nonstandard English dialects are not radically different systems from standard English but are instead closely related to it ... nonstandard dialect is not an isolated system but a part of the sociolinguistic system of English... (p. 17)

For Labov then, social dialects are not self-contained entities, in spite of such features as special tense forms (e.g. BEV she been married is a remote present perfect which suggests that the statement was true in the past and is still true). It remains to be seen whether ILs can establish their claim to be radically different from L_2s in spite of the absence of special tense forms and the like.

5.5. Systematicity and Variability in Child L_2 Acquisition

Only part of recent research into L_2 acquisition has been explicitly intended to test the IL hypothesis (Selinker et al., 1975, Tarone et al., 1976). However, it seems likely that the increasing number of studies devoted to L_2 acquisition, especially of children, will shed light on the IL hypothesis, even though not expressly motivated by it. A further justification for discussing child L_2 acquisition is that its methodological procedures and hypotheses have been moulded by recent research into child L_1 acquisition (for examples of research into child L_1 acquisition see Slobin, 1971; Brown, R., 1976), and that research into child L_1 and L_2 acquisition has contributed significantly to the hypotheses and methods of IL research (see Corder, 1967, Selinker et al., 1975, Tarone et al., 1976).

One of the most interesting aspects of research into child L_1 and L_2 acquisition has been the attempt to discover universals of language acquisition. If universals can be shown to exist, they would limit the possible range of variability and instability in L_2 acquisition. Furthermore, if universals can be shown to exist in child L_2 acquisition, then it would be necessary to investigate whether similar universals exist in adult L_2 learning processes. Because of its possible significance for the IL hypothesis the relevant research is discussed in some detail below.

Research into child L_2 acquisition can be divided into two schools. The first school has concentrated its efforts on studying the development of specific structures, in particular negatives and interrogatives (Cancino, Rosansky & Schumann, 1974; Milon, 1974; Ravem, 1968).

The second school has sought to establish that children acquire certain L_2 morphemes in an invariant order (Bailey, Madden & Krashen, 1974; Dulay & Burt, 1973, 1974 a, 1974 b; Larsen-Freeman, 1974). This school has been able to report some impressive successes in establishing an invariant order of morpheme acquisition, so further discussion is restricted to their work, particularly as two detailed critiques of this approach are available (Rosansky, 1976; Tarone, 1974).

Interest in the possibility of an invariant order in child L_2 acquisition is the result of research into L_1 acquisition. R. Brown's (1976) success in establishing an invariant order of acquisition for fourteen morphemes in three children learning a L_1 led to attempts to reduplicate his results in the field of second language acquisition.

Brown's methods of data collection were longitudinal, but his results were confirmed in an experiment using cross-sectional methods of data collection (de Villiers & de Villiers, 1973). In investigations of child L_2 acquisition the use of cross-sectional methods became standard. In order to elicit from children the morphemes relevant to the research the Bilingual Syntax Measure was developed (Burt, Dulay & Hernandez, 1973). Using this instrument researchers collected cross-sectional samples of morphemes from various populations (Dulay & Burt, 1974 a, 1974 b). By comparing these samples researchers hoped to be able to confirm or reject the invariant acquisition hypothesis.

Quantifying the data involved the use of sophisticated techniques. After the data had been collected the utterances were scored on the basis of whether fully formed morphemes were present in obligatory contexts. The scores of the children on each morpheme were averaged to give a mean

group score. These group scores were then arranged in a rank order which was deemed by Duly and Burt to be the acquisition order. Other researchers viewed this rank order more cautiously as an order of difficulty (Larsen-Freeman, 1975).

The rank values of morphemes extracted from different populations were compared to determine whether acquisition order of morphemes differs according to the language background of the children. Significant correlations between the rank orders of morphemes from different populations were discovered, which led Dulay and Burt to postulate an invariant order of morpheme acquisition as a universal of L_2 acquisition in children. Similar methods were used to investigate morpheme acquisition order in adult L_2 learners. The results correlated with those of Dulay and Burt (cf. Bailey et al., 1974).

The objections raised by Tarone (1974) and Rosansky (1976) are instructive for IL research. The main points can be summarized as follows:

1. In L_1 acquisition the achievement stage can be determined unambiguously by computing the mean length of utterance for each child. In L_2 research there exists no comparable parameter which would enable the researcher to determine the achievement level of his subjects.

2. The relationship between instruction and invariant orders of morpheme acquisition is unclear. Instruction may vitiate the operation of invariant orders.

3. It is unclear which principles should be employed to select the groups to be investigated.

4. The mean group scores used by Dulay and Burt may obscure considerable individual variation. Rosansky (1976) uses her own data to make the point:

> While my grouped rank ordering of means ... statistically correlates with the BSM Bilingual Syntax Measure - generated order of morphemes, given the extent of individual variability about these means in my data, these correlations can hardly be meaningfully interpreted. Thus the entire rank order is subject to doubt. (p. 418)

5. The cross-sectional data sampling used in the research under review is open to question. In an experiment designed to test the validity of cross-sectional methods Rosansky tested the English of one (!) L_2 learner every month for a period of ten months, and classified the data using Dulay and Burt`s methods. Rosansky found that "the cross-sectionally based and longitudinally derived rank orders of the same individual do not correlate" (p. 423). The rank orders of the morphemes fluctuated from month to month and did not resemble the longitudinal order in this experiment. Rosansky thus casts doubt on the expectation that a cross-sectional study of a learner`s language at an arbitrary point in time will be an adequate predictor of his future progress and development.

Although these objections seem to call for some revision of the invariant acquisition hypothesis, a final conclusion to the discussion is not yet in sight. The most important implications for IL research seem to be that the concept of a learner group must be carefully defined, and that both individual and group variability must be given consideration in the research design (see Section 5.1.).

5.6. Problems in Researching Systematicity and Stability

The research reviewed in earlier sections has contained suggestions for the empirical investigation of IL systematicity and stability. However, there is still a certain tension between the idealized systematicity of linguistic theory and the possibility of variation admitted by sociolinguistic and IL research. Neither Bloomfeldian nor Chomskyan linguistic theory has provided the apparatus capable of dealing with linguistic variation. Labov (1975) makes this point as follows:

> The fundamental postulate of linguistics set out by Bloomfield still stands without question: that some utterances are the same. The fundamental fact of phonetics is of course the opposite claim: that no two utterances are in fact alike. The basic mode of operation of linguistics and its raison d`etre follow from the need to resolve this contradiction: we find in principle and in fact that some differences don`t make a difference. (p. 7)

Labov visualizes future linguistic theories being in a position to account for linguistic variation. IL research may be able to make a contribution in this direction.

6. Interlanguage Research as a Form of Differential Psychology

6.1. Interlanguage Research and Individual Differences

Research into the effect of personality variables on success in L_2 learning has now an established tradition (cf. Burstall, 1975; Chastain, 1975; Schumann, 1975). This research seeks an answer to the question "why some people learn a foreign language quickly and thoroughly while others with the same opportunities fail to learn" (Schumann, 1975, p. 209). If individual differences between learners affect L_2 achievement, it would seem logical to suppose that they will also affect the deviant utternaces of L_2 learners, if these utterances are systematic. IL researchers following this approach have the task of isolating linguistic features of ILs which covary with personality factors. Four types of individual differences may influence IL form: (a) individual differences in learning, e.g. individual L_2 achievement levels, individual learning strategies, individual reactions to task complexity (cf. Flammer, 1975), (b) individual differences in interactions between aptitudes and treatments (ATIs) (cf. Flammer, 1973; Hunt, 1975; Kretschmann, 1976), (c) individual differences in personality factors, e.g. in motivation or in IQ, and (d) individual differences in L_1 backgrounds.

A number of IL theorists have argued that the ILs of learners at a similar stage of learning are approximately homogeneous:

> Die "Grammatik" der "Zwischensprache" einer "homogenen" Gruppe von Lernenden ist im wesentlichen systematisch auf jeder Stufe des Lernprozesses; d.h. sie ist so strukturiert, daß sich gewisse Generalisierung machen lassen. (Zydatiß, 1974 a, p. 233).

Nemser (1971) makes a similar point:

> In a given contact situation, the L_as approximative systems of learners at the same stage of proficiency roughly coincide, with major variations ascribable to differences in learning experience. (p. 116)

Zydatiß (1974 a, p. 233) argues that these "homogeneous" groups of learners can then be compared with each other at different stages of IL development. However, an approach to ILs based on individual differences would imply that learners who have reached a particular stage of proficiciency can be grouped according to the criteria mentioned above. Raabe (1974) argues the case for differential psychology in IL research:

> Der Ansatz von L_i Interimssprache impliziert, daß, da es sich um individuelle Sprechereignisse handelt, generalisierbare Beschreibungen von L_i Stücken ... nur nach verschiedenen Gesichtspunkten zu vergleichend Lernergruppen möglich sind. In den Kreis dieser zu berücksichtigenden Variablen gehören z.B.: Lerneralter Wissensstand in L_1, weitere Fremdsprachen, Begabung, Lernzeit, Dialekt in der Muttersprache, sozialer Hintergrund... (p. 13).

Schumann (1976 a) takes a similar position. He distinguishes between initiating factors, cognitive processes, and linguistic product, and emphasizes the role of initiating factors in future L_2 acquisition research (see Figure 1).

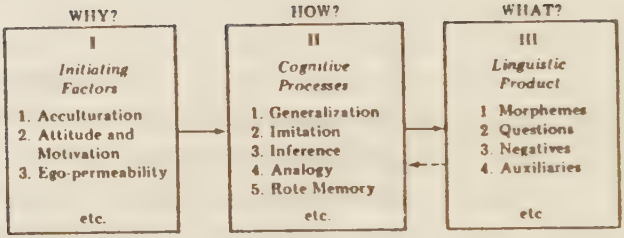

Figure 1.

Schematic Representation of the Second Language Learning Process

Note. From "Second Language Acquisition Research: Getting a More Global Look at the Learner" by J.H. Schumann In H. D. Brown (Ed.), Papers in Second Language Acquisition: Prodeedings of the Sixth Annual Conference on Applied Linguistics. Special Issue of Language Lear 1976.

6.2. Individual Differences in L_1 Background

Judging by the widespread acceptance that interference processes play an important role in L_2 acquisition, it might be expected that L_1 background would be a major determinant of IL variation. However, some researchers have pointed out that learners from different backgrounds make similar errors in their ILs. French (1949) was an early exponent of this view:

> The hundreds of common errors ... of which the above are only samples are met with in regions thousands of miles apart ... the plain fact is that the Japanese and Bantu alike say "Yes, I didn't", and they have scores of other errors in common... (p. 6).

Slama-Cazacu and Doca (1976) analyzing a corpus of 24,800 (!) errors reached the conclusion that, while some errors were best explained in terms of the individual learner's L_1 background, a large number of mistakes were common to all learners regardless of L_1 background (p. 209). In contrast, Schachter et al. (1976) showed that learners' intuitions of grammaticality could be interpreted in terms of their L_1 background. It would seem that more, controlled research is required to clarify this question.

6.3. The Effect of Individual Differences on L_2 Achievement

A number of individual differences have been identified and researched as possible causes of individual variation in L_2 achievement. Although a number of positive correlations have been obtained, it has sometimes proved difficult to replicate

results. One factor which has been extensively studied is motivation (Gardner & Smythe, 1974/75; Lambert & Gardner, 1972). Prima facie it seems likely that motivation should correlate highly with L_2 achievement, but this has not been the case in all investigations (see Burstall, 1975, and Chastain, 1975, for a review of the literature). In spite of such disappointments, recent research has been successful in demonstrating the effects of individual differences. Chastain (1975), in research designed to examine variables in the affective domain, was able to show that thirteen of the ability factors and fifteen of the affective factors were significant. Genesee (1976, p. 278) showed that IQ was a significant factor in attaining academic L_2 skills, but not significant for the acquisition of interpersonal communication skills in the L_2.

These and similar studies suggest that individual differences might account for some of the systematic variation in learner's ILs.

6.4. General and Differential Psychology

The discussion about whether ILs should be seen in terms of groups of learners, in terms of individuals, or as a more global problem may be seen as reflecting the debate between clinical psychology, differential psychology and general psychology. In the following the relationships between these three are discussed with the aim of sketching a theoretical background for IL studies.

Determining the relationship of individual and group learning and behavior can be seen as a problem of establishing the legitimacy of generalizing scientific statements. Individual

differences can be seen as creating unwanted variance which inhibits the formulation of general laws of learning. Such variance is often considered to be merely random; as Underwood (cit. Jenkins, 1967, p. 45) puts it: "it is awfully hard to get interested in a variable which simply expresses itself as variance". On the other hand, general psychological laws which neglect systematic individual variance may limit their own usefulness by being too general.

According to Flammer (1975) general psychology takes little interest in the individual qua individual. The centre of interest is not the individual but "average behavior". General psychology abstracts from the individual in order to formulate general laws which will predict or describe average behavior. Flammer (1975, p. 24) points out that general psychology uses two different abstracting processes: (a) by treating learner behavior as a contribution towards a group average, and (b) by treating subjects as representatives of a population.

While general psychologists have focused their attention on discovering factors which are common to individuals or groups of individuals, differential psychologists have attempted to discover factors which distinguish between individuals or groups of individuals (cf. Allport, 1949, p. 10; Herrmann, 1976, p. 52). The scientific method of differential psychology is still generalization, though at a lower level than general psychology:

> Sie, die Differentielle Psychologie, geht ... einfach weniger weit als die Allgemeine Psychologie und sagt, daß für ihre Theorien zwar nicht alle Individuen gegenseitig austauschbar seien, daß es aber für jedes Individuum eine Untermenge der Population gibt, mit deren Individuen das erste unter dem der Sprache

> stehenden Gesichtspunkt als "homotyp" (Popper) aufgefaßt werden kann. Differentialpsychologische Aussagen sind also verstanden wie allgemeinpsychologische, nur daß sie nicht für alle Individuen der Gesamtpopulation gelten, sondern je für alle Individuen einer Subpopulation." (Flammer, 1975, p. 28)

Thus seen, differential psychology occupies a middle position between the generalizing approach of general psychology and the particularizing approach of individual and clinical psychology.

Flammer (1975, p. 35) maintains that these differing approaches have led to the development of different methods and assumptions in differential and general psychology. General psychology focuses its attention on the effect of external variables on behavior. It manipulates the behavior of its subjects systematically under laboratory conditions with the aim of discovering general laws of behavior. General psycholog is particularly concerned to ensure the repeatability and consistency of its manipulations. Individual differences are regarded as undesirable variance. Reflecting general psychology's concern with averages, the statistical methods used are typically those needed for the comparison of averages, e.g. the analysis of variance. In contrast, differential psychology focuses its attention on the effect of internal variables (individual idfferences) on behavior. The main tools of differential psychology are psychological tests designed to elicit quantifiable information about the individual difference in question. Differential psychology is particularly concerned to establish the reliability of its tests since the validity of differential research depends on individuals reacting in consistent ways to the elicitating

instruments. Typically, the statistical methods of differential psychology are those which can be used to identify group membership, e.g. multiple regression analysis.

If Flammer`s description of differential psychology is accepted, then its approach permits the development of a learner-centered, empirical research at a middle level of generality. Such an approach would correspond to the learner centeredness of IL research. However, as in differential psychology, the interest of IL research cannot be exclusively centered on group norms, since these averages may conceal high levels of individual variation. Merrell (cit. Glaser, 1967, p. 9) has made this point in terms of the relationship between average and individual growth:

> The average of a series of individual growth curves may differ in certain fundamental characteristics from the seperate curves. Therefore when observations on any biological form are taken on different individuals of varying ages and the description of growth is given in terms of the averages of these observations, the form of growth of these averages cannot be assumed to be characteristic of the growth of the individual organism. The curves may differ as to the number of major cycles in their growth and as to the degree of skewness. The extent of these differences depends upon the variability of the individuals. (p. 68)

If the variability of individual performance round a group norm is too great, then the existence of a collective interlanguage will be called into question.

Glanzer (1967) has suggested that, ideally, psychology should be process- and individual - oriented. He stipulates three requirements for a psychological theory:

> 1. A psychological theory ... should be a specification of a process.
> 2. A psychological theory should be a specification of a process within the individual.
> 3. The intra-individual process should be available to experimental manipulation (p. 153).

The use of the procedures of differential psychology in IL research would be a first step in bringing IL theory in line with these requirements.

6.5. Individual Differences in Learning

The study of the effect of individual differences in learning on the learning of new material is a complex task. Flammer (1975, p. 59) sees two relevant factors: the use the learner makes of available learning strategies and previously acquired knowledge relevant to the task in hand. According to Zeaman and House (1967, p. 204) the interaction of intelligence, levels of task difficulty and degree of attention arousal determine individual learning curves. Individual differences in learning may also interact with input and presentation variables (Crothers & Suppes, 1967, p. 311). The effect of ATIs has been little studied in L_2 acquisition research, and is therefore excluded from further discussion here (for an example of ATI research in L_2 learning see Chastain, 1970).

The effect of individual differences in previously acquired knowledge may be particularly pertinent to L_2 acquisition. Gagné and Paradise (1961) developed a hierarchical theory of learning which stressed the interdependency relationship between different stages in learning tasks: in the learning tasks investigated by Gagné it was impossible to move on to the higher stage without achieving proficiency in the lower stages. In hierarchical learning differences between learners become increasingly pronounced as learners move through the different stages. This model is a particularly apt description of learning in mathematics, but it may also apply to L_2 learning tasks. The emphasis by proponents of individualized learning on "learning for mastery" (Bloom, 1973, p. 251) is usually accompanied by implicit or explicit acceptance of this model: mastery of each stage of the curriculum is the precondition for further progress in individualized prgrammes. Sauer (1971) has referred to the hierarchical nature of L_2 learning as "sequentiality" (Sequentialität).

Assuming that this model holds true for at least some L_2 learning tasks, then important consequences will follow. One consequence will be that the starting point of each individual will have a predicative and dynamic quality: the more the learner knows about a given task, the more likely he is to achieve the required terminal behavior. Secondly, initial learning advantages may compensate for deficiencies in other areas of individual differences. Given a task requiring high IQ, relevant knowledge may enable an unintelligent learner to overcome his disadvantage; conversely, given a task requiring hierarchical learning, an intelligent learner may not be able to compete with less intelligent learners who have the advantage of having already achieved mastery of the lower level task. Finally, learners

who have failed to achieve mastery of the lower level tasks may employ strategies different to those of the successful learners when reaching the higher stages of hierarchical learning.

A further point, which would emphasize the sequential nature of L_2 acquisition, is that in the learning of a complex skill, the factorial composition of abilities required in the later stages of learning a complex task may be different from the factorial composition of abilities required in the initial stages. Fleishman(1967, p. 179) has shown that this is the case in the learning of perceptual motor skills. However, there appears to be no comparable research in L_2 learning.

6.6. Implications for Interlanguage Research

The above discussion has indicated that a number of approaches to the effect of individual differences on IL form are possible: ATIs, individual differences in L_1 background, individual differences in learning and individual differences in cognitive and affective variables are all possible candidates for future research in conjunction with the IL hypothesis. In the empirical research discussed in Chapter 10 attention is focused on the role of individual differences in learning in L_2 acquisition. If it is correct to view L_2 acquisition as a form of sequential or hierarchical learning, then it seems plausible to hypothesize that individual learning differences will be reflected in IL forms.

7. Interlanguages and Language Universals

The claim has been made that ILs "must be assumed to be natural languages" (Adjemain, 1976, p. 299). The sociocultural implications of this assumption have already been discussed in an earlier chapter (see Chapter 4). Linguistically, the assumption implies that ILs are subject to the same kind of constraints as other natural languages, and that linguistic universals discovered for natural languages will also apply to ILs. However, the claim has also been made that ILs are in many ways similar to pidgins (Schumann, 1974, 1976 b). Since pidgins have generally been viewed as radically simplified forms of natural languages, these two claims seem incompatible with each other. The following sections discuss the background to this dilemma.

7.1. Examples of Language Universals

Language universals have been identified by Greenberg (1966), Chomsky (1965), and others. Positive and negative universals can be identified on a continuum of increasing abstraction. Positive statements identifying concrete universals might be: "all languages have nouns", "all languages have verbs". Positive statements identifying abstract universals might be: "all languages have a nominalizing process which changes sentences, VPs or verbs into nouns", "all languages have conditional clauses". Negative statements identifying abstract universals can be exemplified by rules which block the occurrence of structures of the type:

$$He_1 \text{ shaved } John_1$$

where the forms marked with subscripts are coreferential

(cf. Postal, 1971). In view of the simplified nature of ILs, only universals postulating negative constraints will be necessarily applicable to IL description. The question of which positive universals apply can only be solved by empirical research.

A distinction between central and peripheral universals has been suggested by Ross (1974, cit. Hatch & Wagner-Gough, 1976, p. 45). In this scheme "no laws apply only to the periphery, but some apply only to the centre" (Ross, 1974, cit. Hatch & Wagner-Gough, 1976, p. 45). Figure 2 illustrates this distinction.

Following the center/periphery distinction Hakuta (1975, cit. Hatch & Wagner-Gough, 1976, p. 46) has suggested the following programmatic hypotheses:

1. In linguistics, there is a center/periphery distinction.
2. In child language acquisition, kids learn the center first
3. In L_2 acquisition, people learn center of L_2 first.
4. In aphasia, the periphery is lost first.
5. In language death, the periphery is lost first.
6. In pidgins and creoles, the center remains.
7. Variation is greater at the periphery than at the center

Hatch and Wagner-Gough (1976) make the point that the center appears to contain more than is required to describe "the beginning utterances of most first and second language learners of English, the language of many retarded children, the language of certain aphasic patients, and many English-based pidgins" (p. 47). The authors make the suggestion that possibly "a diagram that is circles within circles within circles will evolve" (p. 47). If this possibility could be realized, and if the center/periphery hypothesis could be spelt out in more detail, the way would be open to compare the role of universals in ILs with their role in other language forms.

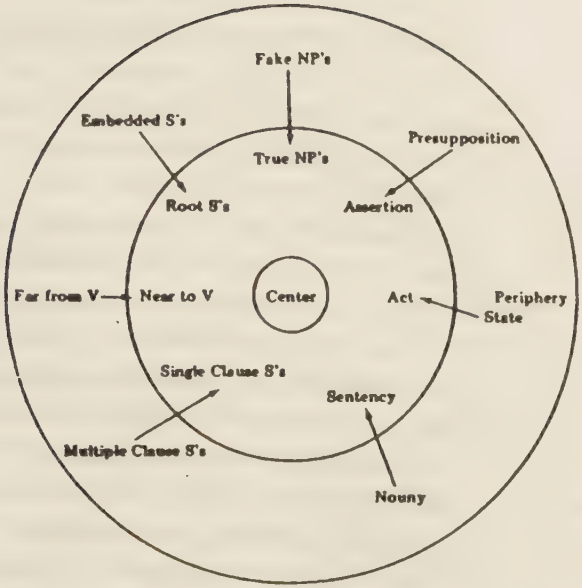

Figure 2. Ross' Center-Periphery Diagram (Ross 1974)

Note. From "The Centre" by J. Ross. Unpublished paper presented at New Ways of Analyzing Variation in English Conference, Georgetown University, October 8, 1974. (Cit. Hatch & Wagner-Gough, 1976, p. 46)

7.2. Pidgins and Interlanguages

Pidgins can be seen as having a number of contact points with learners' ILs. The essential difference between pidgens and ILs is that pidgins represent a compromise system in which elements from at least two languages are combined without any language being the target. The compromise system thus produced is frozen and is passed on without the new speakers having to recreate the system. Such compromise systems are preserved by being legitimized as appropriate means of communication in certain restricted social situations, e.g. when trading or bartering. In the case of ILs the compromise system must be recreated by each learner, one language is clearly the target of the learning process, and the legitimation of ILs as a means of communication is at best partial. The pidgin-like approximation to Spanish, Cocoliche, formerly spoken by Italian immigrants to Argentina, is an example of an IL since the language was unstable in individuals, who progressed in the direction of the target language, and was renewed with each new influx of immigrants (Whinnom, 1971). In individuals ILs are characterized by instability (in comparison with the comparative stability of pidgins); as linguistic systems ILs are generally characterized by the predominance of surface structures and lexical forms from the L_2 (in comparison with the compromise nature of pidgins).

However, the similarities between ILs and pidgins are striking. Both ILs and pidgins are frequently used in situations where the participants have asymmetrical social roles. The synchronic processes of pidginization and creolization may be viewed as analagous in some points to the process of L_2 acquisition. Creolization is, in part, a complexification process, and it has been argued by Corder (1976), p. 28)

that L_2 acquisition should be seen as the complexification of a simple base. Finally, the linguistic forms of ILs and pidgins show a degree of similarity.

7.3. The Complexification Hypothesis

According to Corder (1976) pidgins and ILs should not be regarded as simplified forms of the target language; rather the L_2 forms should be seen as complexification of "a more basic, perhaps universal, grammar of the human language" (p. 28). Language-specific complication rules would be required to explain the acquisition of any given language. All simplified registers would be seen as "instances of fossilized intermediate approximative systems or institutionalized, stereotyped stages in the process of complication towards the standard version of the language" (Krzeszowski, 1976, p. 66). Failure to acquire the target L_2 can be explained as: "initially resulting from cognitive constraints and then persisting due to social and psychological restraints" (Schumann, 1976 b, p. 391).

In spite of the attractive simplicity of this thesis, its present potential is limited by problems in defining the "central" linguistic universals (see Section 7.1.).

7.4. Linguistic Features of Pidgins

ILs and pidgins share many linguistic features. Some of the more abstract features isolated by Schumann (1974, p. 141) which are characteristic of pidgins include:

1. Word order is more important than inflectional morphol

2. The redundancy characteristic of natural languages is reduced.

3. Some grammatical transformations are eliminated:

(a) Synonymous or near-synonymous grammatical constructions such as the active-passive may be missing

(b) Variations in surface structure are kept to a minimum.

c) Pidgins "reflect universal deep ... structure in their surface structures more directly than do natural languages" (Kay and Sankoff, 1972, cit. Schumann, 1974).

4. The vocabulary of pidgins tends to be radically reduced and simplified.

5. Tense markers and the copula tend to be absent. Adverbs may be used instead of tense to indicate time.

In a later empirical study Schumann (1976 b) examined the IL system of one immigrant worker in the U.S.A., and showed that many of the features of the IL could be paralleled in pidgins. Schumann formulated these features in terms of the following rules:

a. The negative particle remains external to the verb and is not placed after the first auxiliary element ...;

b. ...inversion is virtually absent in questions;

c. ...no auxiliaries ... can be said to be acquired;

d. ...possessives tend to be unmarked;

e. ...the regular past ending (ed) is virtually absent; ...

g. ...the progressive morpheme (-ing) is supplied about only 60 % of the time ... (p. 393).

It is likely that such pidgin-like features will also be found in the ILs of slower learners, even those who have been subject to an institutionalized learning process.

7.5. Interlanguages as Natural Languages

The dilemma posed in the introduction to this chapter, namely, to what extent can a simplified form of language also be considered to be a natural language can be solved by adopting either Corder's complexification hypothesis or Ross's center-periphery hypothesis. Both theories imply that both the simple and complexified forms of a language will possess a common core. If it can be shown for ILs that they too possess this common core, then they would belong to the class of natural languages. Given the arbitrary nature of input into ILs it must be doubted whether this will prove to be the case.

8. Elicitation Procedures in Interlanguage Research

Traditional error analysts collected their data in realistic situations without intervening experimentally. After researchers had made the decision to study a particular type of L_2 learning exercise, e.g. dictation, translation, the contents of the exercises were often determined by the institutions where the data was collected rather than by the researchers themselves (cf. Köhler, 1975; Legenhausen, 1975; Steinbach, 1977). This lack of control over the contents of observed situations made it difficult to formulate testable hypotheses, a difficulty which was compounded by the lack of controls in many other areas, e.g. presentation variables, individual differences between pupils. The development of elicitation techniques can be seen as an attempt to extend the area of experimental intervention in IL studies. Elicitation techniques are designed to force or provoke L_2 learners into producing specific IL structures. The development of elicitation techniques has been powerfully influenced by the development of similar techniques in psycholinguistics and the study of child L_1 acquisition. Grimm, Schöler and Wintermantel (1975) see elicitation techniques justified by the possibility of using them to focus on highly important learner structures in child L_1 acquisition:

> die Erhebung von Sprachkorpora und deren Analyse bildet eine wichtige und unersetzliche Grundlage für die Beschreibung des Sprachgebrauchs und für die Erfassung der Sprachkompetenz... . Die daraus abgeleiteten theorierelevanten Hypothesen müssen jedoch

> mit entsprechenden speziell konstruierten Tests überprüft werden ... (p. 19).

Slama-Cazacu has emphasized the possibility of adapting psycholinguistic testing techniques to IL research (1976 a, p. 262 ff., 1976 b, p. 197; see Leuniger, Miller & Müller, 1972 for a review of psycholinguistic research).

The problem of experimental control has been particularly evident when learners have produced IL utterances in a relatively free situation. Learners have used avoidance strategies of escape using L_2 forms which they feel uncertain about: they use alternative, easier linguistic forms, paraphrase, or resort to the L_1 or paralinguistic communicatior A related strategical device is the use of underrepresentation or overrepresentation (Levenston, 1971, p. 115). Overrepresentation refers to the too frequent use (by the standards of native speaker L_2 norms) of L_2 elements, while underrepresentation refers to the underuse (again by the standards of native speaker L_2 norms) of L_2 elements. According to Levenston overrepresentation is likely to be caused by similarity between L_1 and L_2 elements, while underrepresentation is likely to occur when the L_1 and L_2 elements are dissimilar. Both avoidance strategies and underrepresentation will lead to the reduction or elimination of the use of certain forms from learner ILs. Zydatiß (1974 b) suggests that learner utterances produced in a free situation will not give a full picture of his IL potential:

> ... there is no correspondence between the low frequency of a particular error and the actual difficulty, or better, availability of this language point to the larners. The only thing the

> "conventional analyst" can say is that learners do not use this form spontaneously, or that they use it infrequently. (p. 283)

Other researchers to have drawn attention to avoidance strategies include: Corder, 1973 b, p. 39; Schachter, 1974. Elicitation procedures solve the problem of avoidance and underrepresentation by forcing learners to produce structures which they would otherwise avoid or underrepresent.

A further problem of the data-collecting methods of error analysis lies in the objection that the testing instruments used in school are often highly artificial, and that the data collected by using such instruments do not necessarily reflect the use of language in a communicative situation. Guided composition, dictations, translation, pattern practice create corpora of learner utterances whose validity as an adequate sample of learners` ILs are open to varying degrees of doubt. The very institutionalization of L_2 learning may lead to the creation of specific learner responses, which are then reflected in the standardized contexts of institutionalized L_2 learning. For instance, different marking procedures in schools may cause pupils to adopt different strategies of risk.

Researchers have reacted in different ways to the artificiality of the school learning situation and its L_2 teaching methods. Some researchers have attempted to develop elicitation methods which approximate as nearly as possible to communication under normal conditions: the use of guided conversation (Tarone et al., 1976), and the use of pictures as stimulus (Dulay & Burt, 1974 a, 1974 b; Tarone et al., 1976) are examples. Other, more artificial methods have included:

the use of imitation (Naiman, 1974; Swain, 1976, p. 346), the use of fill-in and mulitple-choice questionaires (Zydatiß, 1974, 1976), the use of translation (Naiman, 1974; Taylor, 1975; Zydatiß, 1974), the use of pattern practice (Py, 1975), and combinations of these methods in complex experimental designs. Elicitation methods simulating actual communication are generally less amenable to quantification than the more artificial methods; as Py (1975) puts it:

> Plus il y a de liberté, plus on se rapproche de l`usage réel de la langue; en revanche, certains calculs statistiques deviennent impossibles. (p. 8)

In order to gain a complete picture of learners`ILs, and in order to counterbalance possible distortions caused by the elicitating instruments, Corder (1973 b, p. 42) and Zydatiß (1974 b, p. 288, 1976) have developed a research design known as cyclical error analysis. This design is similar in effect to that proposed for the study of child L_1 acquisition by Grimm et al. (see above). In the first stage of cyclical error analysis data is collected by means of open-ended tests or by means of other forms of non-manipulative fieldwork. The textual data (cf. Corder, 1973 b, p. 39) thus collected achieves observational adequacy. In the second stage the textual data is used as the basis for devising elicitation tests which will tap the learner`s intuitions about his IL. Testing learner intuitions may take several forms: eliciting judgements of acceptability, eliciting authoratative interpretations, and eliciting metalinguistic explanations (cf. Corder, 1973 b, p. 43). In the second stage of cyclical error analysis the researcher will also be able to develop hunches and hypotheses about certain aspects of the learner`s ILs and will be able to

elicit the production of these aspects by restricting the range of learners` possible free choices. In this second stage, then, the researcher can elicit both the production of IL forms and intuitions about IL forms. According to Corder (1973 b, p. 39) descriptive adequacy involves the incorporation of intuitional data.

Up to the present few studies of L_2 acquisition have involved the use of intuitional data. Exceptions have included: Hosenfeld, 1975; Kellerman, 1976; Schachter et al., 1976; Zydatiß, 1973, 1976. It seems desirable to distinguish between quantifiable and non-quantifiable intuitional data. In linguistic fields other than L_2 acquisition the use of subjective, non-quantifiable intuitional data has been the rule; the subjective intuitions of transformational grammarians represent an example of non-quantifiable data (for a critique cf. Labov, 1975). However, some examples of research techniques which quantify intuitional data can be found in sociolinguistic studies and in studies of native speaker reactions to L_1 forms (Greenbaum & Quirk, 1970, Labov, 1975). The quantification of learner IL intuitions will contribute towards the development of an empirically oriented IL research.

8.1. Quantative Approaches to Error Analysis and Interlanguage Research

In the following sections examples of empirical research into ILs are presented and critically discussed. In particular, their research design and quantative methodology are subject to discussion. Research designs are classified as either unifactorial or multifactorial; three types may be distinguished:

1. Type 1, which may be equated with traditional error analyses, classifies and presents errors using the methods of descriptive statistics. Correct utterances are not included in the data. Examples include: Herms (1967), error analyses carried out by the PAKS project group, and Steinbach (1977).

2. Type 2, which may be equated with traditional error analyses influenced by the IL hypothesis, classifies and presents both correct and incorrect forms. This method permits researchers to express the difficulty of particular items in terms of a ratio between the correct and the incorrect use of the item in question. In analyses following a Type 1 methodology the difficulty of specific items can only be expressed as a ratio between different error types. This procedure may exaggerate the difficulty learners experience with certain frequently occurring L_2 linguistic items since the learners will have more opportunities to make errors. Type 2 procedure gives a more realistic estimate of the difficulty of an item. Furthermore, Type 2 procedure gives statistical expression to the requirement of IL theory that deviant and non-deviant utterances be given equal status (cf. Kielhöfer, 1975, p. 173; Tarone et al. 1976, p. 101).

3. Type 3, which may be equated with IL research techniques influenced by psycholinguistics and child L_1 acquisition, applies inferential statistical techniques to IL production. The use of inferential techniques implies a multifactorial design which may express itself either in task differentiation (Kielhöfer, 1975; Tran-Thi-Chau, 1975) or in differentiation between learner groups (Naiman, 1975; Taylor 1975) or in both.

8.1.1. Olsson`s Research into the Use of the Passive by Schoolchildren

Olsson (1972, 1973) analysed the oral production of the passive by Swedish pupils in an advanced and easy course. The elicitation instrument consisted of picture stimuli. The pupils` responses were divided in to three main classes:

Class 1. Correct formation of the passive voice

Class 2. Responses which included the auxiliary be + a past participle but with inaccuracies in the construction

Class 3. Correct and incorrect non-passive formations plus omissions (Olsson, 1973, p. 155).

Olsson was able to show that pupils in the easy course made a higher proportion of Class 3 type errors than the pupils in the advanced course. Olsson was also able to show that pupils made fewer errors with regular verbs than with irregular verbs. Additional experiments were carried out to ascertain the effects of the different types of errors on communication. Reporting the results of an experiment involving the use of native speakers Olsson states that Class 3 type errors are a more serious obstacle to communication than Class 2 type errors. In spite of this, the conclusion is reached that the structure of a sentence is "less important for communication than the semantic aspects of the sentence" (Olsson, 1973, p. 159). Teachers are advised to "take a more lenient attitude to syntactic errors, all the more so as the satisfaction of being able to communicate ... far surpasses that of being able to utter perfect pattern drills ..." (1973, p. 159).

Points of interest in this research include: (a) the multifactorial design which reveals different patterns of errors in different groups of learners, (b) the concentration on a limited number of structures in the research, (c) the inclusion of correct utterances in the design, and (d) the extension of the research to include the communicative effects of errors.

8.1.2. Taylor's Research into Transfer and Overgeneralization

Taylor (1975) investigated the use of interlingual and intralingual transfer strategies by elementary and intermediate college students who had English as their L_2. In the introduction to his experimental section Taylor sketches four hypotheses underlying his work:

1. Second language learners of English make errors which are not attributable to the structure of their native language and which, therefore, cannot be predicted by the Contrastive Analysis Hypothesis.
2. Many errors which second language learners make can be attributed to inherent difficulties and/or irregularities in English itself and can be explained by a strategy of target language syntactic overgeneralization.
3. Overgeneralization errors are neither random nor idiosyncratic, and they can be enumerated within a limited taxonomy of error types.
4. Errors which appear to indicate a reliance on native language structures (native language transfer) are more common among elementary speakers of English than they are among intermediate speakers. Errors which appear

> to be attributable to overgeneralization are more common among intermediate speakers than they are among elementary speakers. (p. 74 - 75)

The test which was constructed in order to test these hypotheses consisted of eighty sentences in the subjects` L_1 recorded by a native speaker. The recording was then played to the subjects, who were instructed to translate the sentences into English. These written translations were categorized according to the error taxonomy developed by Taylor (p. 100 - 103).

The results of this experiment confirmed the hypotheses advanced by Taylor. A large proportion of the errors made by the elementary and intermediate subjects were overgeneralizations. By expressing the overgeneralization and transfer errors of the subjects as ratios, Taylor was also able to show that intermediate subjects made a significantly higher proportion of overgeneralization errors than the elementary subjects (see Figure 3). Since the test was designed so as to restrict subjects` answers to eight L_2 sentence types, the impact of variation in L_2 strucures on the error ratio could also be demonstrated (see Table 1).

Both the methods and the results of this experiment are instructive. The procedure used seems to confirm the validity of using tightly-controled elicitation tests and, in particular, the viability of translation tests as a method of controled elicitation. The results confirm the importance of overgeneralization as a category of interlanguage analysis and the importance of L_2 level of achievement as a factor in explaining variations in interlanguage behavior (cf. Section 8.1.4. and 10.7.1.). Some reservations must

however, be made. In particular, the theoretical discussion of the relationship between intralingual and interlingual interference in Chapter 3 suggested that since some so-called overgeneralization errors may also be influenced by the structure of the L_2, a strict distinction between overgeneralization and transfer errors must be regarded with some scepticism. Taylor, however, accepts this distinction uncritically. In effect his research ignores possible interactions between interlingual and intralingual processes (see Section 3.6. for a discussion of this point). Future interlanguage research will have to come to grips with this problem (see Section 10.8. for an attempt to do so).

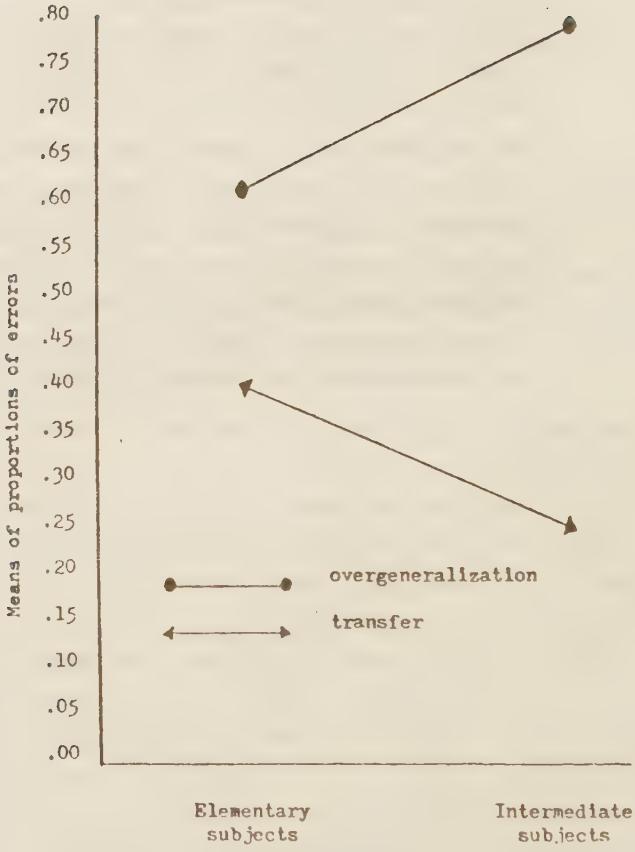

Figure 3.

The Means of the Proportions of Overgeneralization and Transfer Errors Made by the Elementary and Intermediate Subjects in Taylor's (1975) Experiment.

Note. From "The Use of Overgeneralization and Transfer Learning Strategies by Elementary and Intermediate Students of ESL." by B. Taylor, Language Learning, 1975, 25, 72-107.

Table 1

Proportion of Elementary (E) and Intermediate (I) Instances of Errors in the Eight Sentence Types to the Total Number of Elementary and Intermediate Errors per Sentence Type in Taylor's (1975) Experiment

	overgeneralization		transfer	
sentence type	E	I	E	I
Statements	.62	1.00	.38	0.00
Questions	.48	.69	.52	.31
Negatives	.65	.75	.35	.25
Negative questions	.60	.72	.40	.28
Subject Wh-questions	.91	1.00	.09	0.00
Object Wh-questions	.31	.54	.69	.46
Neg subj Wh-questions	.79	.92	.21	.08
Neg obj Wh-questions	.51	.56	.49	.44
mean	.61	.77	.39	.23
t	1.776+		1.776+	

+ $p < .05$ one tailed

Note. From "The Use of Overgeneralization and Transfer Learning Strategies by Elementary and Intermediate Students of ESL." by B. Taylor, Language Learning, 1975, 25, 72-107.

8.1.3. Tran-Thi-Chau's Research into Hierarchies of Difficulty

Tran-Thi-Chau (1975) used a combination of multiple-choice and completion tests to investigate Stockwell, Martin and Bowen's (1965) hierarchy of difficulty. The items were designed to test predictions of this hierarchy. The results of the test were evaluated by using the classical methods of test analysis (cf. Lienert, 1967). The validity and reliability of the test was computed, and the items subjected to analysis. Variance analysis and t-tests were used to analyze student performance on different types of tasks. The research design can be seen as an example of the application of the instruments of psychological research to IL studies.

8.1.4. Naiman's Use of Imitation as an Elicitation Technique

Imitation has been used as an elicitation technique in studies of child L_1 acquisition (Chomsky, 1968; Menyuk, 1969; Slobin, 1973; Smith, 1970). In this type of elicitation technique subjects are asked to imitate oral utterances provided by the researcher. The major hypothesis of this school of research has been that learners will reprocess the stimulus sentences in accordance with their own internalized grammars. The differences between the stimuli sentences and the responses produced by the learners can be used to determine the structure of the internalized grammars. Naiman (1974) transferred this technique to the context of child L_2 learning. Translation was employed as an additional elicitation technique.

Naiman`s research centered on three topics: (a) the relationship between encoding and decoding in the context of elicited imitation, (b) the classification of errors according to Selinker`s (1972) schema, and (c) variation in language learning behavior between different groups of learners. The results of the research could be used to assess the validity of imitation as an elicitation technique.

The analysis of the decoding/encoding relationship showed that "for an individual to imitate accurately a syntactic structure embedded in a supra-memory span sentence, he must first decode (interpret) the sentence" (Naiman, 1974, p. 13). This result shows that the imitation of the sentences used by Naiman was not merely determined by rote learning. The use of encoding in imitation and production tasks was similar. This similarity represents further evidence for the validity of the imitation technique of elicitation.

Selinker`s (1972) schema proved to be a viable categorization instrument for learner errors. Naiman notes that "Many of the children produced the same "incorrect" verb forms. This would lead one to believe that there are systematic strategies by which English-speaking children attempt to produce past tense verb forms in French." (p. 16). An analysis of the error types used by children in production and imitation tasks showed that children who used a definable strategy in one task tended to use the same strategy in the other task (p. 15).

Naiman tested for the effect of learner variation on L_2 learning by grouping his subjects in two ways. The first form of grouping assigned the learners to different groups according to whether they belonged to the first or second

grade. However, few differences between these groups were established (p. 12). In a second form of grouping learners were assigned to two different groups on the basis of their success in answering a number of criterion questions. In subsequent analysis Naiman was able to show that numerous differences between the good learners and the poor learners exist with respect to interlanguage behavior (p. 29–32).

Naiman`s approach is interesting and innovative. His use of carefully counterbalanced design is exceptional in interlanguage studies. The combination of careful experimental planning and multivariate statistical analysis produces evaluable and valid results even with a relatively small sample of subjects (N = 112). Methodologically, Naiman`s experiment is of importance for interlanguage studies since it confirms the validity of highly controlled methods of interlanguage elicitation such as translation and imitation (cf. Naiman, p. 27). Substantially, Naiman`s work conforms to the theories of interlanguage research workers such as Selinker (1972) and confirms the relevance of interlanguage categories for the analysis of L_2 learning behavior. Finally, Naiman goes beyond previous studies by establishing the level of L_2 achievement as an important factor in interlanguage research.

8.1.5. Zydatiß`s Research into Learner IL Intuitions

Zydatiß`s (1975) dissertation (translated into German in 1976) represents the most ambitious attempt to date to apply the cyclical elicitation procedures suggested by Corder (1973 b, 1976). Since this research highlights many of

the difficulties involved in developing satisfactory elicitation procedures, Zydatiß`s methods are discussed in some detail here.

Zydatiß`s study investigated the use of the English expanded and simple forms by German learners. The first step consisted in the collection and analysis of the use of these verb forms in open-ended elicitation tests (Nacherzählung, free and guided compositions) by students in the tenth class of a German Gymnasium (maximum N of subjects = 142). A corpus of almost 60,000 words was collected. The analysis of this material lead Zydatiß to the conclusion that "Der Gebrauch der EF (= expanded form) ist weitgehend ein semantisches Problem. Es wäre deshalb sehr wichtig zu wissen, was die Schüler glauben, was diese Form "bedeutet" ("bezeichnet")" (1976, p. 15). In the second step, therefore, three controlled elicitation procedures were used to test the semantic intuitions of the students. In the first procedure ("free-choice selection test") students were required to choose between the simple and expanded form in a fill-in type test and to judge the acceptability of both forms in the given context (see Table 2). The figures in the Column "Zurück" in Table 2 are to be interpreted as a measure of the students` certainty in rejecting a given alternative. In the second procedure ("Evaluierungs- und Präferenztest") students were required to judge the acceptability of English translations of a German sentence and to rank-list the translations in the order of their acceptability (see Table 3). In the third procedure ("kontrollierter Interpretationstest") students were required to judge whether English sentences were logically implied by the German sentence given (see Table 4). These procedures were then

used to test student reactions to the expanded and simple forms of verbs of different semantic classes (e.g. inchoatives and transitional event verbs; see Leech, 1971, for a classification) and to test the use of aspect in contexts where the meaning of the verb phrase is codetermined by adverbials and/or by the situation. The hypothesis underlying the research design seems to be that these semantic differences in the verb phrase will lead to systematic differences in learner behavior.

In the conclusion to his experimental section Zydatiß draws a number of substantive and methodological conclusions (p. 249 ff.). An example of an important substantive conclusion is his assertion that "Die Übergeneralisierung des Gebrauchs der EF (= Expanded Form) im Falle des Aktuellen Präsens auf generische, habituelle und nichteingeschränkte Sachverhalte ... (wurde) von den EV (= Entlockungsverfahren) bestätigt..." (p. 249). Methodologically, he reaches the conclusion that traditional types of error analysis (including open-ended elicitation) are necessary but non-sufficient instruments for an adequate description of learners` interlanguage and must be supplemented by the more controled types of elicitation (p. 252).

The extent to which Zydatiß`s conclusions can be accepted as experimentally proven depends on the assessment of the validity of his experimental methods. These are, however, open to criticism. The data base for the controlled elicitation procedures is slender since the maximum N of subjects is 51. In the case of the free-choice selection test students were apparently given only two sentences for each semantic context tested. These sentences are the only basis for judging the students` production in the controlled situation.

A more serious objection is that the author fails to test for statistical significance, even where this would have been possible (e.g. by using a χ^2 approach to some of the data given in Zydatiß, 1976, Table 12, p. 30). The lack of inferential statistics makes it difficult to determine whether learner behavior in different semantic contexts is varying randomly, and makes it difficult to compare learner behavior between contexts. Each individual analysis given by Zydatiß of a particular piece of interlanguage behavior is interesting and full of insights, but the data for each analysis remain isolated and fail to merge into a more general pattern.

Finally, the structure and interpretation of the Evaluierungs- und Präferenztest and the kontrollierter Interpretationstest are often of doubtful validity. Grammatical and semantic errors which are not relevant to the purpose of assessing the learners` intuitions of the semantics of the English verb are included as items in the Evaluierungs- und Präferenztest (e.g. Items 2c and 2e in Table 3). This procedure considerably reduces the number of items which are genuine semantic choices and complicates interpretation. Table 3 provides an instance of the interpretative problem. Zydatiß uses the evenly balanced acceptances and rejections of the official translation (Items 2 c) as evidence that students make errors when using the expanded form with this class of verbs (transitional event verbs). However, in the open-ended elicitation tests (Zydatiß, 1976, p. 30) contradictory evidence can be found. In these tests the total distribution of appropriate and

distribution of appropriate and inappropriate expanded forms is evenly balanced, but in the context of transitional event verbs inappropriate use of the expanded form exceeds appropriate use in the ratio 10:1.

Interpretation is further complicated if we note that four of the five items in Table 3 might be considered to contain the notion of "ongoingness" or transition and are thus partially acceptable semantic equivalents for the German stimulus sentence. The kontrollierter Interpretationstest (Table 4) is equally difficult to interpret. Zydatiß argues that "die meisten Schüler glauben, daß der Übergang im Augenblick des Sprechens stattfindet" (p. 93). But it can also be argued that students are unwilling to reject sentences in which the notion of "ongoingness" is strongly implied.

Reinterpreting Zydatiß`s material, we may conclude that students are aware that the these verbs contain the notions of "ongoingness" and "transition"; whether or not they realize that the terminating point of the process is indefinite can hardly be settled on the basis of the evidence. The more important question of whether the class of transitional event verbs are more or less difficult than other verb classes for German learners of English must also be left unsettled.

The above analysis indicates the difficulty in constructing forms of elicitation which are unambiguously interpretable. The application of inferential statistics and the development of detailed hypotheses are necessary disciplines if better elicitation tests are to be developed.

Table 2

An Example of a Free-Choice Selection Test

Nr	Testsatz: FCS - n = 42	Auswahl	Selekt	Zurück
1	The next day many soldiers and common people came to see Sir Foulk. And then the great moment ___. Sir Foulk jumped first to the top of the first step and then to the second. And so he progressed to the top.	came	22	12,5
		was coming	20	19,5

Note: From Tempus und Aspekt im Englischunterricht by W. Zydatiß. Kronberg: Scriptor, 1976.

Table 3

An Example of an Evaluierungs- und Präferenztest

Nr	Testsätze: E & P – n = 51	a Akz	b Eval #	b Eval +	c Präf[1] R1	c Präf[1] R2
1	Der Mann lag im Sterben, als ich ihn auf der Straße fand. Aber irgendwie erholte er sich und macht jetzt wieder seine Arbeit.					
	a) The man was just going to die when I found him on the road.	#	19	32	22	140
	b) The man was dying when I found him on the road.	+	24	27	12	130
	c) The man is dying when I found him on the road.	#	51	0	0	199
	d) The man died when I found him on the road.	#	42	9	2	172
	e) The man lay in death when I found him on the road.	#	25	26	18	127
2	Er ist eben beim Erwachen.					
	a) Just he wakes up.	#	26	26	6	122
	b) Just now he wakes up.	#	20	31	22	107
	c) He is at waking up.	#	45	6	3	188
	d) He wakes up.	#	39	12	1	170
	e) He is waking up.	+	16	35	25	114

Note: From Tempus und Aspekt im Englischunterricht by W. Zydatiß. Kronberg: Scriptor, 1976.

[a] # indicates that the sentence is unacceptable to native speakers; + indicates acceptability.

[b] # indicates rejection of the sentence by the subjects; + indicates acceptance.

[c] The column R1 is the sum of first preferences falling on the item; R2 is the sum of the second, third, fourth and fifth preferences falling on the item. The higher the figure in Column R2, the less it is favoured by the subjects.

Table 4

An Example of a kontrollierter Interpretationstest

Nr	Testsätze: KI - n = 42	Ja	Nein	?	-
1	John is dying.				
	a) John ist im Augenblick des Sprechens bereits tot.	4	36	1	1
	b) John lebt im Augenblick des Sprechens noch.	25	11	4	2
	c) John liegt im Sterben; d.h. er liegt schon länger in diesem Zustand, und es ist mit seinem Ableben zu rechnen.	26	13	2	1
	d) John wird sicher sterben; er ringt schon länger mit dem Tode, und sein Ableben wird ganz gewiß eintreten. Er kann auf keinen Fall vor dem Sterben gerettet werden.	26	15	0	1
	e) John verstirbt gerade im Augenblick des Sprechens, d.h. einen Moment später ist er tot.	33	4	1	4
2	The train is stopping.				
	a) Der Zug rollt im Augenblick des Sprechens noch.	18	22	2	0
	b) Der Zug steht im Augenblick des Sprechens bereits.	8	34	0	0
	c) Der Zug kommt allmählich zum Stehen; d.h. er wird immer langsamer, und es ist mit seinem Stillstand zu rechnen.	20	17	4	1
	d) Der Zug kommt im Augenblick des Sprechens gerade zum Stillstand; d.h. einen Moment später steht er still.	37	2	1	2

Note: From Tempus und Aspekt im Englischunterricht by W. Zydatiß. Kronberg: Scriptor, 1976.

8.2. Development of Empirical Interlanguage Research

If the typology of interlanguage research design developed in Section 8.1. is applied to the examples of interlanguage research given in the preceeding sections, then it is clear that Zydatiß's research falls under the Type 2 research design, while the research of the other authors falls under Type 3. A comparison of these two approaches suggests that interlanguage research will be best served by a more intensive use of the methodology and procedures of empirical psychology. The research presented in Chapter 10 is intended as a contribution to this approach to interlanguage research.

9. Elicitation Procedures as Tests and Psychological Experiments

It has been argued by Zydatiß (1973) that elicitation procedures "are not tests in the strict sense, they are not tests for measuring ... the statistical treatment within the item analysis can therefore remain very basic indeed" (p. 287). However, the elicitation procedures reviewed in previous chapters do in fact attempt to quantify and measure learner behavior and in so doing conform to Lienert`s (1969) test definition:

> Ein Test ist ein wissenschaftliches Routineverfahren zur Untersuchung eines oder mehrerer empirisch abgrenzbarer Persönlichkeitsmerkmale mit dem Ziel einer möglichst quantativen Aussage über den relativen Grad der individuellen Merkmalsausprägung. (p. 7)

Zimmermann (1972) points out that under certain conditions a test may function as an experiment:

> Wenn es bei einem Test darum geht, eine Kausalbeziehung zu untersuchen, dann wäre ein solcher Test durchaus als Experiment zu bezeichnen. Zusätzliche Voraussetzung ist die Kontrolle anderer Faktoren .... und die explizite ex ante-Formulierung einer Kausalbeziehung. (p. 36)

At least some of the elicitation procedures described in Chapter 8 fulfil these requirements (e.g. Naiman, 1974; Taylor, 197).

If elicitation procedures are to be regarded as tests and experiments, it is both necessary and desirable to check their validity and reliability since both these factors play

a special role in IL research. The validity of results from a test using one particular kind of elicitation procedure may be called into question, since every elicitation procedure is likely to have response sets associated with it. Response sets have been defined as "any tendency causing a person consistently to give different responses to test items than he would when the same content is presented in a different form" (Cronbach, 1946, p. 476, cit. Michel, 1964, p. 51). The response sets associated with elicitation procedures involving translation will probably be different from the response sets associated with pattern practice elicitation procedures. One task of validation procedures in IL research will be to measure the strength of such response sets. The measurement of the reliability of elicitation procedures can be seen from two points of view. On the one hand, reliability coefficients indicate the extent to which a procedure is consistent in its measurement of individual traits (cf. Anastasi, 1976, p. 103; Lienert, 1969, p. 14). The importance of reliable procedures for IL research is that a stable "baseline" (Glaser, 1967, p. 11) is provided, which acts as an effective control on other variables (cf. Glaser, 1967, p. 12). On the other hand, reliability coefficients also show "the degree to which the test score indicates unchanging [Cronbach's footnote: This may be modified by requiring constancy over some specified period (one year, one day, etc.)] individual differences in any traits ..." (Cronbach,1945, p. 7-8). From this point of view then, the reliability coefficients of elicitation procedures indicate the degree to which intraindividual and group IL behavior is systematic and

stable. Whether reliability coefficients are interpreted as measuring systematicity or stability will depend on the research design and the method used to compute the coefficient. In the following sections the application of the concepts of reliability and validity to IL research is discussed in greater detail.

9.1. Test Validity and Elicitation Procedures

Test validity refers to the ability of a test to measure the characteristic the designer intended the test to measure, and the accuracy with which it performs this task. Lienert (1969) gives the following definition:

> Die Validität eines Testes gibt den Grad der Genauigkeit an, mit dem dieser Test dasjenige Persönlichkeitsmerkmal oder diejenige Verhaltensweise, das (die) er messen soll oder zu messen vorgibt, tatsächlich mißt. (p. 16)

According to Anastasi (1976, p. 134) the validity of a test cannot be determined without taking its intended use into consideration. No test has high or low validity in the abstract. A number of different types of validity have been identified. Those relevant to IL research are discussed below.

9.1.1. Criterion-related Validity

The use of a criterion in validation procedures implies a comparison between the results of a test and some other objective measure. Criterion-related validity "indicates the effectiveness in predicting an individual's behavior in

specified situations" (Anastasi, 1976, p. 140). Two types of criterion-related validity can be distinguished: (a) predictive validity: the criterion is obtained "some time after the test is given (Cronbach & Meehl, 1955, p. 282), and (b) concurrent validity: test score and criterion score "are determined at essentially the same time" (Cronbach & Meehl, 1955, p. 282). At present most IL researchers would probably be content to establish the concurrent validity of IL procedures rather than to aim for the more ambitious goal of establishing predictive validity.

The critical problem for IL research in this connection is to establish what the criterion should be with which the results of elicitation tests are cross-validated. Possible criteria include: (a) all learner utterances which attempt to communicate meaning, (b) meaningful learner utterances occurring in non-institutionalized face-to-face contact, or (c) meaningful learner utterances occurring in non-institutionalized face-to-face contact between equals (cf. Chapter 2). These criteria are increasingly restrictive, and it is perhaps doubtful whether enough data can be collected in situations (b) and (c) to enable cross-validation to take place.

9.1.2. Content Validity

Content validity is established by showing that "the test items are a sample of the universe in which the investigator is interested" (Cronbach & Meehl, 1955, p. 282, cf. Michel, 1964, p. 49). In effect the researcher must show the test contents are an adequate base for the generalizations he wishes to make. Examining the narrow scope of IL research

to date (see as an example Tarone et al., 1976), it seems clear that this research must be greatly extended if it is to be in a position to make statements of high generality about the IL hypothesis.

9.1.3. Construct Validity

Construct validity is an approach to ascertaining the validity of tests measuring variables inaccessible to direct observation. Cronbach and Meehl (1955) describe its premises as follows:

> Construct validation is involved whenever a test is to be interpreted as a measure of some attribute or quality which is not "operationally defined". The problem faced by the investigator is, "What constructs account for variance in test performance?" Construct validity calls for no new scientific approach. Much current research on tests of personality is construct validation, usually without the benefit of a clear formulation of this process." (p. 282)

There is, then, no unified procedure for ascertaining construct validity. The nomological network in which the construct being tested occurs must be elaborated and the components of the structure defined (Cronbach & Meehl, 1955, p. 290). Michel (1964) gives the following description of this process:

> Die Validierung von Tests, die Aussagen über bestimmte Konstrukte erlauben sollen, erfolgt im wesentlichen durch Einordnung in ein theoretisches Bezugssystem, aus dem empirisch verifizierbare

> Hypothesen abgeleitet werden können ....Je fester ein Test in das theoretische Bezugssystem eingeordnet werden kann, je dichter das "nomological network" geknüpft werden kann, desto größer ist die Evidenz, daß ein Test tatsächlich das Konstrukt erfaßt, das er erfassen soll, bzw. desto präziser läßt sich das Konstrukt kennzeichnen, auf das vom Testverhalten geschlossen werden darf. (p. 57)

Corder (1973) has stated that observational adequacy alone is not sufficient to describe ILs (cf. Chapter 9). If this argument is accepted, then a process of construct validation could also be applied to elicitation procedures. Methods of construct validation include:

1. Studies of Internal Test Structure High intercorrelations of test items are evidence for test homogeneity (Cronbach & Meehl, 1955, p. 288). However, if the intention of the test was to predict behavior in a wide variety of situations, this homogeneity will reduce the generalizability of the results (Cronbach & Meehl, 1955, p. 288; Lienert, 1969, p. 46). High intercorrelations between items increase test validity only when the test planned to focus on a fairly narrow segment of behavior. Characteristics of subgroups of items may limit the construct validity of a test if it can be shown that irrelevant elements such as response sets influence behavior. On the other hand, study of item subgroups may lead to the rejection of the hypothesis of a response set.

2. Stability of Test Results Reactions of the same or different populations over time may help to define the construct validity of a test (Cronbach & Meehl, 1955, p. 288). Random fluctuations or changes not explicable in terms of the theory defining the construct may cast doubt on the validity

of the test, assuming that the theory can be verified from other sources. Observation of the effect of experimental variables on test scores represents a similar technique (Anastasi, 1976, p. 151).

3. Analysis of Interindividual and Intergroup Differences Inexplicable differences between groups of subjects may cast doubt on the hypothesis (Lienert, 1969, p. 262).

4. Factorial Analysis of Test Results A factorial analysis of the test in question, and a comparison with factor analysis of related and non-related tests will help to show whether the test is measuring what it is intended to measure.

9.2. The Validity of Translation as an Elicitation Test

In order to give an impression of the problems involved in validating elicitation tests, translation has been selected for discussion since it plays a role in the empirical research reported in Chapter 10. As an achievement test translation has often been subject to criticism (e.g. Nickel, 1973, p. 26; Enkvist, 1973, p. 17). The selection of lexis and syntax in translations designed to test achievement is usually random; this is likely to lead to low levels of concurrent validity and dubious curricular validity. Furthermore, the marking of translation tests is difficult to standardize (cf. Köhler, 1975, p. 3; Steinbach, 1977, p. 36). However, in spite of its doubtful merits as an achievement test, a number of researchers have chosen to advocate or use translation as an elicitation test (e.g. Juhász, 1970; Naiman, 1975; Taylor, 1975; Zydatiß, 1972, 1973). As an elicitation test translation has a number of advantages: (a) the careful construction of items permits a high content and curricular validity, (b) the "ideal" translation of the L_1 stimulus

provides a tertium comparationis against which the learner IL response can be judged, and (c) the unambiguous semantic content of the L_1 stimuli reduces the misunderstanding which may take place when other elicitation methods, e.g. pictures, are used. The disadvantage of translation as an elicitation technique is that, prima facie the presence of the L_1 form may unduly influence IL forms, thus exaggerating the importance of interference. Taylor (1975) presented the L_1 translation stimulus in oral form in an effort to reduce interference. Naiman (1975) used several elicitation techniques in his research design and so was able to compare their effects on IL production.

The experiment showed that the subjects "committed many of the same errors on the spontaneous production task as they did on the translation task" (p. 27). This would support the validity of translation as an elicitation technique. On the other hand Naiman noted differences between groups of learners: "the poor learners seemed to decode, then encode every word sequentially, regardless of the appropriateness of such a technique" (p. 35).

Theoretical discussion has argued that the influence of L_1 structures on the IL forms may be reduced if the translation takes place on the basis of the deep structure (Walmsley, 1970, p. 198) or if the learner takes a sceptical view of the equivalence of L_1 and L_2 structures (Nickel, 1972, p. 23). Advocates of the bilingual method have also argued that the presence of an overt L_1 stimulus does not appreciably increase interference (Dodson, 1967; Butzkamm, 1973). These arguments suggest that the response sets associated with translation need not mean abandoning translation as an elicitation technique; a definitive judgement on its validity is, however, on the basis of present evidence, not yet possible.

10. Experimental Section

The preceding chapters have emphasized two major features of interlanguage theory. Firstly, factors which influence learner consistency in the use of an L_2 have been discussed. These factors include individual differences between learners, the use of language learning strategies, and the transfer of L_1 and L_2 structures into the interlanguage systems of the learners. Secondly, methods of empirical research into learners' interlanguages have been analyzed. The research presented in this chapter unites both these strands in the argument. Substantively, the following experiments attempt to measure learner consistency in the use of a limited interlanguage subsystem and to quantify the influence of modifying factors, such as individual differences between learners, on learner consistency. As pointed out in Chapter 6, learner consistency in the use of L_2 structures has two facets: consistency at one point in time ("interlanguage systematicity") and consistency over time ("interlanguage stability"). A technique for measuring both interlanguage systematicity and interlanguage stability is proposed in Section 10.6.. The influence of individual differences and the effect of L_1 and L_2 interrelationship on interlanguage systematicity are analyzed in Sections 10.8. and 10.9. respectively. Methodologically, the form of these experiments has been to a large extent determined by previous experiments in interlanguage research (see Chapters 8 and 9). A variant of the cyclical error analysis suggested by Corder (1973 b, p. 42) and Zydatiß (1974, p. 286) was employed. In the pilot studies elicitation

procedures were used which permitted the learners to construct their own answers; these free responses then served as models for the items in the multiple-choice elicitation test which became the major instrument in the later experiments. Multiple-choice format has been used in a number of IL studies (e.g. Dusková, 1969; Zydatiß, 1974). It has the advantage that a sufficiently large data corpus can be collected to permit the use of inferential statistics. Inferential statistics enable the researcher to generalize his results with more confidence than would be the case if only descriptive statistics were available (see Achtenhagen & Wienold, 1975, as an example of the problems which arise when only a limited data sample is available). A further advantage of multiple-choice format is that experiments can be replicated by other researchers. A discussion of the validity of the elicitation test used in the present research is given in Section 10.10..

In spite of the application of inferential statistics to the data, generalizations must be made with some caution. This is perhaps inevitable given the tentative and exploratory character of the present state of interlanguage studies. The generalizability of the results of this study is restricted by three major factors: (a) the limited number of linguistic structures tested and the concentration on two categories of error within these structures, (b) the use of children who are not academically orientated as subjects in the experiments, and (c) the lack of a longitudinal study of interlanguage stability over a longer period of time. The range of structures tested was limited

to the present simple, present continuous, present perfect, simple past, and some modal auxiliaries. This limitation seemed legitimate since the aim of the study was to test the validity of certain categories in interlanguage studies and it was not intended to give a complete picture of the subjects` interlanguage systems. However, it must be noted that even this range of structures is broader than the ranges tested in other studies devoted to research into interlanguage systematicity and stability (cf. Swain, 1976; Tarone et al., 1976). The decision to restrict the study to verb forms was motivated by the availability of numerous studies of L_1 and L_2 learning which concentrate on the acquisition of verb forms (see Section 5.5. for studies dealing with the acquisition of L_1 verb forms; studies of the acquisition of L_2 verb forms include Ravem (1968) and Taylor (1975)). Schoolchildren were used as subjects in order to make the results of these experiments more immediately relevant to the needs of second language teachers. The school environment has, on the whole, been neglected by interlanguage researchers. A notable exception is Zydatiß (1975, 1976). Slower learners were chosen since it was expected that patterns of systematicity and stability would reveal themselves more clearly in this population. The third restriction on the generalizability of the results, the lack of a long-term longitudinal study of learner interlanguage systems, was to some extent overcome by the use of cross-sectional comparisons between learners at different stages in the learning process.

These restrictions mean that generalization of the results to other population groups (e.g. more academic learners) and to other linguistic structures should be made only with

great caution. Generalizations made in the following discussion of the results are to be interpreted in this sense.

In spite of these limitations, the research design does fulfil an important condition of interlanguage research, namely that the behavioral events investigated must be associated with individual learners. This condition can be deduced from the requirement that interlanguage research be treated as a form of differential psychology (see Section 6.6.) or from the detailed criticism of language learning research which fails to meet this condition (Rosansky, 1976; Tarone, 1974). In the present case, the use of questionnaire format ensures that this condition is met.

Broadly stated, the aims of the investigation were focused on the following areas:

(1) Interlanguage Systematicity The interlanguage hypothesis implies that the errors made by individual learners at a given point in time are not random. Since this research gives access to individual performance data, this hypothesis can be tested;

(2) Interlanguage Stability Some interlanguage researchers have suggested that individual learners consistently make the same types of errors over a period of time. The research design chosen permits this hypothesis to be tested over a short time span for individual learners. A comparison of two groups of learners at different stages in the learning of English allows an analysis of changes in interlanguage performance over a longer period of time;

(3) Individual Differences and Interlanguage Behavior Researchers have suggested that individual differences may be associated with systematic variation in interlanguage behavior. Two tests measuring verbal intelligence and

closure were given to one of the groups. Further individual differences were isolated by computing the level of English achievement for each subject, and by breaking the group down by sex. These variables were used to test the hypothesis that a relationship exists between interlanguage variation and individual differences;

(4) The Effect of L_1 and L_2 Structures on Interlanguage Behavior

A number of researchers have attempted to show that the complex interrelationships between L_1, L_2, and the interlanguage competence acquired to date have predictable effects on the production of particular structures (Juhász, 1970; Kielhöfer, 1975). The research design permits investigation of some aspects of these relationships;

and (5) The Validity of Elicitation Tests It was assumend that data obtained in the course of the investigation would help in deciding whether the form of the elicitation test and the research design are a valid method of investigating learners` interlanguages.

10.1. Pilot Studies

In a series of experiments which „preceded" the development of the elicitation test used in the main body of research open-ended methods of testing were used to elicit samples of interlanguage behavior. Most of the questions used focused on the learners` use of the dummy auxiliaries do and did. Two types of elicitation test were employed. In the first type the experimental methods used by Taylor (1975) and described in Section 8.1.2. were followed quite closely. Subjects were presented with a series of German stimulus sentences and were required

to give the English equivalent in writing. The stimuli sentences had been recorded by a German native speaker and were played to the subjects on a tape recorder. As an additional aid to the semanticization of the German sentences pictures portraying the actions described in the stimuli were shown to the subjects as the appropriate sentences were played back. The sentences were taken one at a time, and the subjects were allowed sufficient time to complete their answers before the next sentence was played. Following Taylor it was hoped that the combination of oral and pictorial stimulus would reduce the subjects` dependence on a word-for-word translation strategy. In a second type of elicitation test subjects were required to provide the positive and negative of missing verb forms. A pictorial stimulus was provided for each sentence, but no overt German stimulus was present. The learner responses from both types of test are a prima facie guide to the content validity of the elicitation test given in Appendix I (cf. Sections 9.1.2. and 10.10). Examples of learner responses to these pilot tests are given in Appendix V.

In order to obtain a relatively homogeneous sample of interlanguage utterances, attention was limited to learners` use of the English verb phrase and, in particular, their use of the auxiliary. The range of structures tested was restricted to the positive, interrogative and negative forms of the present continuous, present perfect, simple past. Modal auxiliaries were also included. The statistics used in the following sections refer only to those questions in which the use of an auxiliary is obligatory in the correct response. Two types of error were defined:

(a) verb phrases in which an obligatory auxiliary has been omitted and (b) verb phrases involving some other kind of error, e.g. inappropriate auxiliary, omission of an obligatory suffix, inappropriate suffix, inappropriate main verb form. The first type is referred to as an omission error, while the second type is called a non-omission error. In previous studies omission errors have been interpreted as instances of a transfer or simplification strategy, while non-omission errors have been seen as instances of an overgeneralization strategy (Richards, 1971, p. 14; Taylor, 1975, p. 96-97, 103-104). The terminology used here was adopted in order to avoid prejudging the psychological interpretation of linguistic structures.

The morphology of the errors made by the learners is of considerable interest. Non-omission errors predominate in both the translation and fill-in tests in the ninth class, a result which is reduplicated in the multiple choice elicitation test (see Section 10.7.). Many of the non-omission errors have their origin in the use of one or more of the following strategies:

(a) Auxiliary Neutralization In this strategy two or more forms of the English auxiliary are used interchangeably as morphs which realize one interlanguage morpheme. Thus the learners often neutralized concord distinctions by using doesn`t and don`t as alternate forms. In some cases neutralization of two forms is restricted to a limited range of contexts. Some learners neutralize the distinction between don`t and didn`t in a past context, but there was less evidence to show that this happens when learners are clearly operating in a present context. This phenomenon is an indication that proactive

interference may be of more importance than retroactive interference in the process of L_2 learning since don`t is learned before didn`t;

(b) Aspectual Neutralization Some learners apparently neutralize the distinction between the suffix -ing, a marker of continuous aspect in English, and the zero morph, which may be a marker of non-continuous forms, or between -ing and a past morph;

(c) Redundant Marking of Main Verb Forms This phenomenon is often associated with auxiliary neutralization in past tense contexts; the past morph is retained even though it is not required as part of the main verb e.g. he didn`t went. This strategy may be the result of transfer from the L_1 since in German the main verb is always marked for the past;

(d) Auxiliary Neutralization plus Correct Main Verb Forms A major crux in the interpretation of errors within the verb phrase is that some cases of auxiliary neutralization (e.g. didn`t / don`t) are only recognizable as such if accompanied by redundant marking of the main verb form. If no redundant marking is present in the main verb, then utterances result which may be correct and therefore interpretable as correct utterances in a inappropriate context. The only solution to these and similar problems is an intensive examination of the output of each individual learner or the use of interviews.

The above analysis lends partial support to George`s (1971) theory that the reduction of redundancy is the major strategy in $L_2$ learning. However, if this theory were completely true we might expect the use of omission errors to be learners` preferred strategy. In fact learners` interlanguages are a complex mixture of L_1 transfer,

redundancy reduction by the neutralization of the distinctions between L_2 forms, and attempts to do justice to the perceived reality of the L_2.

10.1.1. Interpretation of Pilot Studies

Subjects` responses suggested that it was difficult for them to select the appropriate English tense form on the basis of the semantic cues contained in the stimulus (see Appendix V). The picture stimulus in the fill-in elicitation test is admittedly ambiguous, but it was expected that the use of a German present tense in the translation stimulus would lead learners to mark their interlanguage tense forms for the present. The results show that this was not necessarily the case. For example, many learners used correct but inappropriate past forms or used incorrect forms containing a past marker. This response behavior can be explained by the difficulty of the task, a difficulty reflected in the low figure for the correct responses. The problem for the learners is to select semantically appropriate tense forms, to use the correct morphology of these tense forms, and to give English equivalents of the remaining parts of the German stimulus. The combination of these three elements seems to make open-ended translation in the form described an unmanageable task for these learners, particularly for those in the seventh class. In the face of this high level of difficulty, but also as a response to semantically ambiguous stimuli (as in the fill-in test), susceptibility to interference from extraneous stimuli in the immediate environment (e.g. immediately preceeding responses made by the learners themselves)

seems to increase.

The multiple-choice elicitation test developed later contained items modelled on the responses made by learners in the pilot study tests. This test format facilitated the learners` task. Furthermore, the accuracy of the classification process was improved by excluding "unclassifiable" elements from the test and by reducing the semantic choice available to the learner, concentrating instead on the morphological forms.

10.2. Structure of the Elicitation Test

The multiple-choice elicitation test (see Appendix I) was constructed so that learner responses could be classified as correct responses, omission errors, and non-omission errors (see Section 10.1.).

In the evaluation of the data omission and non-omission errors were regarded as single units. Thus I wasn`t went * instead of the correct I didn`t go was counted as one instance of a non-omission error rather than two. Similarly I not went * instead of the correct I didn`t go was counted as one instance of an omission error. A more complex classification scheme treating the verb phrase as two or three independent units (auxiliary, main verb, and infix or suffix) would have led to considerable difficulties in test construction and evaluation and would imply a rather atomic approach to interlanguage analysis.

The effect of the classification scheme and the evaluation procedure is to create two distinct error classes. In the case of omission errors the learners` non-use of the auxiliary is always deviant, while in the case of non-omission errors the auxiliary may be correct. Non-omission

errors form a more heterogeneous class than omission errors. Furthermore it seems likely that the "perceptual salience" (Slobin, 1973, p. 202) of omission errors will cause learners to regard them as a homogeneous class.

As in the pilot studies the range of structures tested was restricted to the positive, interrogative and negative forms of modal auxiliaries, the simple present, the present continuous, the simple past, and the present perfect.

10.2.1. Responses Available in the Elicitation Test

The elicitation test (see Appendix I) took the form of a multiple choice questionnaire. Each question was preceded by a German stimulus sentence. Subjects were required to select the correct translation. The test contained 48 questions. Thirty two questions were devised so as to test the subjects use of correct responses, omission errors, and non-omission errors (Questions 1, 9–18, 20–25, 34–48). These core questions were constructed with the following characteristics: one of the items is the correct response; two items are omission errors; two items are non-omission errors. Question 35 is an example of this structure:

Hast du Peter heute geholfen?

(a) Do you helped Peter today?
(b) Helped you Peter today?
(c) Have you helping Peter today?
(d) Help you Peter today?
(e) Have you helped Peter today?

A German translation stimulus was included in order to semanticize the response items, and thus facilitate the subjects' task. Without this aid it seemed probable that the concentration of the young learners would be overtaxed. The use of a translation stimulus enabled one item to be identified as the target response and permitted an unambiguous classification of the error types. Translation has been used as an elicitation device in a number of interlanguage studies, and the problems associated with it have been discussed in general terms in an earlier section (9.2.). The design of the present elicitation test contained a number of controls on the effects of translation. An analysis is given in Section 10.9..

10.2.2. Arrangement of Test Items and Test Questions

The structure of the questions gave the learners an equal chance of selecting omission and non-omission errors. However, the chance of selecting a given error type is twice as great as the chance of selecting the correct response. In other words, the a priori probability of a learner making a given type of response is affected by the multiple choice format of the test. This factor must be borne in mind when comparing the absolute figures for different types of responses within one population group (cf. Taylor, 1975, p. 86). It must be remembered that the test was not intended to give a precise simulation of learner interlanguage behavior under field conditions, but to reveal underlying tendencies.

The test was designed so that it could be split into parallel halves when analysing learner performance. This

feature permitted the consistency of each learner`s performance between the two halves to be analyzed thus giving a measure of learner systematicity. The first half of the core questions consisted of Questions 1, 9-18, 20-24. The second half of the core questions consisted of Questions 25, 34-48. The characteristics of the core questions in the first half always had a parallel in the second half. The following features can be found in both parts of the test:

(a) Translation stimuli Both the German Perfekt and Imperfekt are used as stimuli for the English past in each half of the test. The Perfekt stimulus is used in Questions 20, 21, 43 and 44. The Imperfekt stimulus is used in Questions 22, 23, 24, 45, 46 and 48;

(b) Target structures The following target structures are required in both test halves (the first set of figures in brackets refers to the first half, the second set to the second half): (a) present continuous (1,25); present continuous negative (10, 34); (c) present perfect (11-12, 35-36); (d) simple present interrogative (13-15, 37-39); (e) simple present negative (16-18, 40-42); (f) simple past interrogative (20-21, 43-45); (g) simple past negative (22-24, 46-48).

In each test half questions were arranged in ascending order of difficulty; structures and vocabulary used in the test were chosen so as to reflect the level of achievement in the population.

10.3. Standardized Tests

A group of the ninth classes (N = 104) was given three subtests measuring grammar skills, verbal ability, and closure respectively. The subtests measuring closure and verbal ability were taken from Horn's Prüfsystem für Schul- und Bildungsberatung P-S-B (Horn, 1969; see Appendix III). The test measuring grammar skills was taken from the Hamburger Englischtest HET 6+ (Fettweiß et al., 1966). This test can be found in Appendix II.

10.4. Characteristics of Populations Sampled

Interlanguage research aims at contributing to the better understanding of language learning processes and to developing improved teaching methods. In view of this, it is curious that little attention has been paid to investigating the interlanguages of schoolchildren (for exceptions see Achtenhagen & Wienold, 1975; Legenhausen, 1975). Moreover, it might be expected that the interlanguages of schoolchildren, particularly of slow-learning schoolchildren, would be a fruitful field for the testing of theoretical problems in interlanguage research. A cursory examination of the English of slow learners reveals tendencies towards pidginization and fossilization.

These considerations led to a decision to select subjects for the investigation from schools where slower learners are concentrated. Since the German school system is three-tiered, and since pupils are assigned to schools on the basis of their academic ability, slow learners are concentrated

in one type of school, the Hauptschule (in some respects equivalent to the British Secondary Modern School). English is a compulsory subject in secondary schools in West Germany, but the levels of achievement required from pupils in the Hauptschule are lower than the levels required in the other types of school, as can be seen by comparing the official guidelines for teaching English in the three school types (Lehrplan, 1973). In view of the possible influence of socio-economic class on language learning (Burstall, 1975, p. 10), it is worth noting that most children in the Hauptschule have parents of low socio-economic status.

The subjects for the investigation were selected from Hauptschulen in or nearby Hagen and Dortmund. The use of a setting principle in the organization of school courses meant that the weaker pupils were taught in a Grundkurs (basic course), while the better pupils were taught in an Erweiterungskurs (extension course). The first sample of learners ("seventh classes") consisted of five classes in the seventh school class with 113 pupils. Three of the classes were basic courses, while two were extension courses. The second sample of learners ("ninth classes") consisted of eight classes in the ninth school year with 216 pupils. Three of the classes were extension courses, four were basic courses, and one was a mixed group. The average difference in age between the seventh and the ninth classes was approximately two years.

10.5. Administration of Tests

The seventh classes were given the elicitation test for the first time in August and September 1977. After an interval of one month the test was readministered. This procedure permitted a later analysis of learner performance over a short time span. The same test was given to the ninth classes in February and March 1978, but in this case no retest was made. The ninth classes were also given the grammar section of the Hamburg English Test (see Appendix II), and tests of closure and verbal intelligence (see Appendix III). The subjects were given as much time as necessary to complete the test. In the seventh classes most pupils finished within 35 minutes; slightly less time was required in the ninth classes.

10.6. Interlanguage Systematicity and Stability

Interlanguage systematicity is the consistent, non-random use of definable sets of interlanguage structures by individual learners at one point in time. It has already been argued that this is the most fundamental axiom of IL theory (see Chapter 5). Only when interlanguage systematicity has been established does it become possible to investigate the use of interlanguage strategies. The converse of systematicity is variability, that is, the inconsistent and random use of definable sets of interlanguage structures by individual learners at one point in time. The terms stability and instability refer in the same fashion to the consistent and inconsistent use of interlanguage structures over time.

In view of the fundamental importance of these concepts, it is surprising that little has been done to operationalize them. In the theoretical section the work of Tarone et al. (1976), who have attempted to provide a working definition of systematicity and stability, is reviewed and rejected on the grounds that their use of cutoff criteria does not utilize available data to the full extent, neglects the possibility of chance variation on both sides of the criterion figure, and involves setting the cutoff point arbitrarily (see Section 5.6.).

The inadequacy of previous methods of operationalizing systematicity led to a search for alternative methods. In the following section reliability coefficients have been used as a method of quantifying systematicity and stability. The term "reliability" is something of a misnomer in the present case, and reflects the use of the coefficient in classical testing theory. However, alternative terminology (e.g. "generalizability coefficient" Cronbach,1970, p. 154) also seemed inadequate, so the traditional name of the coefficient was retained.

Reliability coefficients provide an estimate of how consistently individuals respond to a given set of stimuli. The advantage of reliability coefficients for interlanguage studies is that a reliability coefficient for a group of learners is calculated by including their individual variability in the appropriate formula (see the Spearman-Brown formula below). As measures of systematicity reliability coefficients meet the condition that individual variability is taken into account, and have the advantage that a single coefficient is calculated for a group of learners (see Section 5.5. and 5.6.).

In classical test analysis reliability coefficients have generally been used in the standardization process. In the analysis of psychological tests the assumption is generally made that the characteristic measured is stable; variance is attributed to test inadequacy. In the present investigation it cannot be assumed that interlanguage behavior is stable. Low reliability coefficients may mean that interlanguage behavior is highly variable or the variance may be attributable to the test itself. In other words, if reliability coefficients turn out to be low, then it cannot be assumed that interlanguage systematicity does not exist. It may exist, but this elicitation test may be failing to capture it. On the other hand, if reliability coefficients are high this indicates that the behavior measured is consistent.

The number of responses available and the homogeneity of the test items will also affect the size of the reliability coefficient. Larger samples of behavior will magnify tendencies present in smaller samples. Thus high reliability coefficients can be increased still further by taking a larger sample of the behavior tested. Similarly, tests with a high degree of homogeneity will tend to increase the size of reliability coefficients. The problem of defining homogeneity with respect to interlanguage behavior has been discussed in previous sections (Section 5 and 5.1.).

10.6.1. Systematicity and Stability Measured by Reliability Coefficients

Reliability coefficients were calculated for all the tests administered. Coefficients were also calculated between the test and retest in the seventh classes. Only core questions

were included in the computations, and seperate coefficients were calculated for correct responses, omission errors and non-omission errors (see Tables 5, 6, 7 and 9). Following the interlanguage theory, it was hypothesized that learner responses would reveal a high degree of systematicity and stability. Reliability coefficients computed for one point in time indicate the degree of interlanguage systematicity; reliability coefficients computed between the test and retest in the seventh classes are a measure of short-term interlanguage stability.

Two types of reliability coefficients were used. The Spearman-Brown Split-Half Coefficient is traditionally used when a test can be split into two parallel halves, or where a test-retest situation is being investigated. The procedure for computing the coefficient can be expressed by the formula: $r\ (SB) = 2r(xy)/(1 + r(xy))$.
In the present investigation the coefficient was used to calculate relationships between test halves and between the test and retest in the seventh classes. Other reliability coefficients were calculated with Cronbach`s alpha, at present probably the most frequently used measure of reliability (Cronbach, 1946; Specht, 1977, p. 71). Alpha is computed by using interitem variance as basis to estimate consistency of responses to all items in the test. When used to measure dichotomous data, as is the case here, it is the equivalent of the Kuder-Richardson Formula 20 (Specht, 1977, p. 71).

Inspection of Tables 5, 6, 7, 8, and 9 reveals that the reliability coefficients for correct responses and omission errors are uniformly high at one point in time. In published and standardized tests coefficients above 0.80 are considered to be acceptably high (Anastasi, 1976, p. 109). Non-omission responses, on the other

hand, are uniformly low. These figures indicate that correct and omission responses possess a high degree of systematicity, while non-omission responses are more variable. A comparison of the seventh and ninth classes reveals that this pattern of systematicity and variability is very similar in both groups, suggesting that interlanguage strategies may not change radically over this period.

The reliability coefficients in Tables 7 and 9 give a measure of short-term stability in the seventh classes since these coefficients measure consistency in the use of the interlanguage forms tested over a period of approximately a month.

However, the figures in Table 7 are not directly comparable with the figures in the other tables since the test/retest comparison contains double the number of questions in the other tests. Table 9 gives adjusted figures which are comparable to those in other tables. Short-term interlanguage stability shows the same type of structure as interlanguage systematicity, but contains more variance. This result is intuitively interpretable since it is to be expected that individual behavior will vary more over time that at one point in time.

A possible interpretation of these results is that non-omission errors should be regarded as careless mistakes (see Nickel, 1972, p. 16 ff. for a discussion of careless mistakes), while omission errors are the result of a definite strategy. An alternative explanation for the variability of non-omission errors may lie in the heterogeneity of the items comprising this error class. However, in the context of this elicitation test, the high systematicity of omission errors has been established.

Table 5

Reliability Coefficients for the Seventh Classes (First Test)

Scales	First test half	Second test half	All items	First half/ Second half
Responses				
Correct Response	0.716	0.814	0.839	0.814
Omission Response	0.691	0.810	0.850	0.780
Non-omission Response	0.218	0.563	0.534	0.410

Note. N of items in the test = 31. Coefficients in the final column are calculated with the Spearman-Brown formula. All other coefficients are Cronbach`s alpha.

Table 6

Reliability Coefficients for the Seventh Classes (Second Test)

Scales	First test half	Second test half	All items	First half/ Second half
Responses				
Correct Response	0.630	0.802	0.863	0.803
Omission Response	0.715	0.785	0.848	0.791
Non-omission Response	0.541	0.454	0.637	0.554

Note. N of items in the test = 31. Coefficients in the final column are calculated with the Spearman-Brown formula. All other coefficients are Cronbach's alpha.

Table 7

Reliability Coefficients for the Seventh Classes (Test/Retest)

Scales	Test 1[a]	Test 2[a]	Test 1/Test 2[b]
Responses[c]			
Correct Response	0.81	0.80	0.81
Omission Response	0.85	0.84	0.86
Non-omission Response	0.53	0.63	0.646

Note. N of items in each test = 31.

[a]The coefficients were calculated with Cronbach's alpha.

[b]The coefficients were calculated with the Spearman-Brown formula.

[c]The coefficients were based on all the questions in the test. Coefficient for a reduced scale were calculated using a method given by Cronbach (1970, p. 171).

Table 8

Reliability Coefficients for the Ninth Classes

Scales	First test half	Second test half	All items	First half/ Second half
Responses				
Correct Response	0.737	0.746	0.844	0.802
Omission Response	0.707	0.806	0.855	0.805
Non-omission Response	0.432	0.514	0.609	0.522

Note. N of items in the test = 31. Coefficients in the final column are calculated with the Spearman-Brown formula. All other coefficients are Cronbach's alpha.

Table 9

Adjusted Reliability Coefficients for the Seventh Classes (Test/Retest)

Scales	Test 1 / Test 2
Responses	
Correct Response	0.68
Omission Response	0.75
Non-omission Response	0.47

Note. The coefficients now correspond to those of a test with 31 items. The reduction was achieved using a method given by Cronbach (1970, p. 171).

10.7. Comparison of the Seventh and Ninth Classes

Taylor (1975) has found that elementary and intermediate adult learners differ significantly in their use of transfer and overgeneralization strategy (see Section 8.1.2.). It was therefore hypothesized that the seventh and ninth classes would also differ significantly in their use of omission and non-omission errors, in other words, that the length of time spent learning English has a significant effect on interlanguage behavior. Inspection of the percentage scores (Table 10 shows that non-omission errors reach the same levels in both the seventh and the ninth classes, while only a slight drop (1.99 %) in omission errors between the first test in the seventh classes and the test in the ninth classes was recorded. Seperate analyses of variance for omission errors and non-omission errors were carried out to determine whether these differences were significant (Tables 12 and 13). Learners form each population were randomly assigned to two groups, and statistics were computed between these groups rather than the populations as a whole. This procedure guaranteed the independence of the variables tested. The results show that the null hypothesis that the means of the populations are the same cannot be rejected in the case of omission and non-omission errors, and the hypothesis advanced above must be rejected. A seperate analysis of variance for correct responses (Table 11) which used all the learners in the population approached significance ($F = 3.537$, $p = 0.0609$).

An explanation of why the results here differ from those of Taylor`s needs to be given. One possible explanation for the differences may be that learners in the seventh classes can no longer be regarded as elementary and that interlanguage forms have become fossilized at this point.

Table 10

Percentages of Error Types and Correct Responses by Populations and Tests (Core Scales)

	Seventh Classes		Ninth Classes
	Test 1	Test 2	Test 3
Correct Responses	30.00	28.64	33.45
Omission Errors	32.74	34.48	30.75
Non-omission Errors	34.36	34.01	33.24
Missing Values[a]	2.90	2.87	2.56

[a]Values were counted as missing when subjects failed to answer a question and when two or more items in the same question were answered.

Table 11

Descriptive Statistics and Analysis of Variance Summary of the Effect of Population Membership on Correct Responses

		Seventh Classes		Ninth Classes	
Descriptive Statistics					
	N	113		216	
	$\bar{X}$	9.354		10.653	
	SD	5.855		5.996	
		df	ss	ms	F	P
Source						
	Between groups	1	125.146	125.146	3.537	0.0609
	Within groups	327	11568.799	35.379		
	Total	328	11693.945			

Table 12

Descriptive Statistics and Analysis of Variance Summary of the Effect of Population Membership on Non-omission Errors (Random Sample)

	Seventh Classes	Ninth Classes
Descriptive Statistics		
N	53	55
$\bar{X}$	10.40	10.22
SD	3.15	3.50

	df	ss	ms	F	P
Source					
Between groups	1	0.86	0.86	0.077	0.782
Within groups	106	1180.05	11.13		
Total	107	1180.91			

Table 13

Descriptive Statistics and Analysis of Variance Summary of the Effect of Population Membership on Omission Errors (Random Sample)

	Seventh Classes			Ninth Classes	
Descriptive Statistics					
N	55			57	
$\bar{X}$	10.581			8.719	
SD	6.190			5.97	
	df	**ss**	**ms**	**F**	**P**
Source					
Between groups	1	97.1	97.1	2.624	0.1081
Within groups	110	4070.88	37.0		
Total	111	4167.97			

10.8. Individual Differences

Interlanguage researchers have suggested that differences between individual learners may influence the use of interlanguage form (see Chapter 6). To test the hypothesis that interlanguage forms covary with individual differences, the relationship between sex differences, level of achievement in English, verbal intelligence, and closure and the response types available in the elicitation test was investigated.

In view of the exploratory nature of the present research, no attempt was made to cover the full range of individual differences. For similar reasons no use was made of partial correlation and multiple regression techniques to estimate the amount of variance attributable to each individual difference factor. The use of such statistical methods is problematic since as yet no coherent theory of the effect individual differences on second language learning exists. However, it is likely that the individual differences chosen for analysis in this test (with the possible exception of closure) will continue to be of importance in future research in this field.

10.8.1. Relationship of Achievement Level to Interlanguage Performance

In a previous section (Section 10.7.) the hypothesis was tested that differences in the length of time spent in learning English would have a significant effect on interlanguage

behavior. However, no significant differences were found. In the following section the hypothesis is tested that differences in the achievement level of individual learners will have a significant impact on their interlanguages. As in Section 10.7. the discussion is influenced by Taylor's (1975, p. 83) finding that the use of transfer and overgeneralization strategies varied significantly between elementary and intermediate learners. Naiman (1974, p.29-32) has also shown that "good learners" and "poor learners" differ in the type of interlanguage strategy employed.

As a first approach to testing the hypothesis an analysis of variance approach was used. The subjects in the ninth classes were divided into two groups according to whether they belonged to an extension course (Erweiterungskurs) or to a basic course (Grundkurs). Belonging to an extension course was assumed to indicate higher levels of achievement, while belonging to a basic course indicated underachievement.

Using course membership as the independent variable, seperate analyses of variance and seperate sets of descriptive statistics were computed in which correct responses, omission errors, and non-omission errors were the dependent variables (Tables 14, 15 and 16). In each case the null hypothesis was that there would be no significant difference between the populations in respect to the variable tested.

Tables 14 and 15 indicate that the null hypothesis must be rejected in the case of correct responses and omission errors. Underachievers make significantly more omission errors than learners in extension courses ($F = 66.928$, $p = 0.000$).

Learners in extension courses made significantly more correct responses than learners in the basic courses ($F = 74.676$, $p = 0.000$).

In the case of non-omission errors the null hypothesis cannot be rejected (see Table 16). In interpreting this last result it must be borne in mind that above average learners have fewer possibilities of responding with an error type than below average learners. As correct responses increase, the "space" available for an error type automatically decreases.

To overcome this problem, an additional method of a analysis was developed in which the absolute figures for the error types were reduced to an intraindividual relationship. Two classificatory variables, each with two categories, were defined for every learner. One variable measured whether the number of correct responses was above or below average ($\bar{X} = 11.042$). The second variable measured whether learners made more omission errors than non-omission errors or more non-omission errors than omission errors (Tables 17 and 18). It was hypothesized that significant relationships would be found between below average correct responses and omission errors, and between above average correct responses and non-omission errors.

An examination of the results for the seventh and ninth classes showed that in all cases the above average learners showed a highly significant tendency to use non-omission errors rather than omission errors. In the seventh classes the below average learners showed a highly significant preference for omission errors ($\chi^2 = 14.629$, $p = 0.000$). In the ninth classes the

preference of below average learners for omission errors approached significance ($\chi^2 = 3.811$, $p = 0.051$).

Taken as a whole, these results show that the levels of achievement in the L_2 have a profound effect on interlanguage behavior. Global analyses which neglect this factor must be considered inadequate. The development of curricular material and teaching strategies must also reflect the systematic variation in interlanguage behavior brought about by differing levels of achievement (see Chapter 11).

Table 14

Descriptive Statistics and Analysis of Variance Summary of the Effect of Course Type on Correct Responses in the Ninth Classes

	Extension Course (Erweiterungskurs)			Basis Course (Grundkurs)	
Descriptive Statistics					
N	92			123	
$\bar{X}$	14.196			8.024	
SD	6.430			4.003	
	df	**ss**	**ms**	**F**	**P**
Source					
Between groups	1	2004.48	2004.48	74.676	0.000
Within groups	213	5717.405	26.84		
Total	214	7721.885			

Table 15

Descriptive Statistics and Analysis of Variance Summary of the Effect of Course Type on Omission Errors in the Ninth Classes

	Extension Course (Erweiterungskurs)	Basic Course (Grundkurs)
Descriptive Statistics		
N	92	123
$\bar{X}$	5.783	11.00
SD	4.027	5.028

	df	ss	ms	F	P
Source					
Between groups	1	1432.72	1432.72	66.928	0.000
Within groups	213	4559.652	21.407		
Total	214	5992.372			

Table 16

Descriptive Statistics and Analysis of Variance Summary of the Effect of Course Type on Non-omission Errors in the Ninth Classes

	Extension Course (Erweiterungskurs)	Basic Course (Grundkurs)
Descriptive Statistics		
N	92	123
$\bar{X}$	10.087	10.610
SD	4.051	3.362

	df	ss	ms	F	P
Source					
Between groups	1	14.385	14.385	1.067	0.3029
Within groups	213	2872.573	13.486		
Total	214	2886.915			

Table 17

Distribution of Response Tendencies of Above and Below Average Learners in the Ninth Classes

	More non-omission responses	More omission responses	Total	χ^2	p
Above average learners	o = 72.5 e = 44.5	o = 16.5 e = 44.5	89	35.236	0.000
Below average learners	o = 52.5 e = 83.5	o = 74.5 e = 83.5	127	3.811	0.051
Total	125	91	216		

Note. o = observed frequencies, e = expected frequencies. χ^2 calculated over all four cells = 39.047,

p = 0.000.

Table 18

Distribution of Response Tendencies of Above and Below Average Learners in the Seventh Classes

	More non-omission responses	More omission responses	Total	χ^2	p
Above average learners	o = 34 e = 22	o = 10 e = 22	44	13.091	0.000
Below average learners	o = 19 e = 35	o = 51 e = 35	70	14.629	0.000
Total	53	61	114		

Note. o = observed frequencies, e = expected frequencies. χ^2 calculated over all four cells = 27.719, p = 0.000.

10.8.2. Effect of Sex Differences on Interlanguage Performance

In a survey of the literature relating to the effects of sex differences on second language learning, Burstall (1975, p. 11) has pointed out that data about this point is not readily available, often because the number of subjects in typical second language research is not large enough to be broken down by sex. Investigations which have included the effect of sex differences have obtained differing results. Research on college students and late adolescents has revealed no significant differences between boys and girls in L_2 learning (Brega & Newell, 1967). On the other hand, research involving children and young adolescents has shown significant differences (Burstall, Jamiesson, Cohen & Hargreaves, 1974; Johnson, Flores, Ellison & Riestra, 1963; Nisbet & Welsh, 1973). In the NFER research the most marked differences between boys and girls occurred in the secondary modern school, and Burstall suggests low socioeconomic status may be associated with sex differences in language performance (Burstall, 1975, p. 11).

Following these studies, the hypothesis was adopted that significant differences exist between the ILs of boys and girls. Independent oneway analyses of variance were performed in both the seventh and the ninth classes with sex difference as the independent variable and correct responses, omission errors, and non-omission errors as dependent variables (s. Tables 19,20 and 21). In the case of correct responses girls scored significantly higher in both the seventh and the ninth classes. Girls also made significantly fewer omission errors in both the seventh and the ninth classes.

The analysis of variance did not reveal any significant difference between the groups in the case of non-omission errors. However an analysis of the relationship between sex differences and a dichotomous variable which measured whether learners made more non-omission errors than omission errors showed that female learners have a significant tendency towards non-omission errors (Table 22).

The most likely explanation of these results are the different socialization processes boys and girls undergo. High scholastic achievements by girls have been documented on a number of occasions. The tendency towards higher levels of L_2 achievement is already immanent in the girl`s social role, and is apparent in the data here. In view of the correspondences between the above average learner`s interlanguage behavior and girls` interlanguage behavior it seems logical to assume that the interlanguage differences between the sexes which have been presented here occur because girls are on the whole high achievers, while the boys are underachievers.

Table 19

Descriptive Statistics and Analysis of Variance Summary of the Effect of Sex Differences on Correct Responses in the Ninth Classes

	Female Pupils	Male Pupils
Descriptive Statistics		
N	103	113
$\bar{X}$	11.54	9.84
SD	6.35	5.55

	df	ss	ms	F	P
Source					
Between groups	1	156.27	156.27	4.416	0.0368
Within groups	214	7572.89	35.39		
Total	215	7728.98			

Table 20

Descriptive Statistics and Analysis of Variance Summary of the Effect of Sex Differences on Omission Errors in the Ninth Classes

	Female Pupils			Male Pupils	
Descriptive Statistics					
N	103			113	
$\bar{X}$	7.81			9.65	
SD	5.04			5.36	
	df	ss	ms	F	P
Source					
Between groups	1	182.3	182.3	6.709	0.01
Within groups	214	5815.03	27.17		
Total	215	5997.33			

Table 21

Descriptive Statistics and Analysis of Variance Summary of the Effect of Sex Differences on Non-omission Errors in the Ninth Classes

	Female Pupils				Male Pupils
Descriptive Statistics					
N	103				113
$\bar{X}$	10.49				10.32
SD	3.89				3.47
	df	**ss**	**ms**	**F**	**P**
Source					
Between groups	1	1.500	1.5	0.111	0.739
Within groups	214	2892.26	13.51		
Total	215	2893.76			

Table 22

Distribution of Response Tendencies of Male and Female Learners in the Ninth Classes

	More non-omission responses	More omission responses	Total	χ^2	p
Male pupils	o = 63	o = 50	113	1.49556	0.221
	e = 56.5	e = 56.5			
Female pupils	o = 70.5	o = 32.5			
	e = 51.5	e = 51.5	103	14.0194	0.000

Note. o = observed frequencies, e = expected frequencies. χ^2 calculated over all four cells = 15.51496, p = 0.000

10.8.3. Relationship of Verbal Intelligence and Closure Factors to Interlanguage Performance

Both intelligence and verbal ability have been fairly extensively investigated in the literature dealing with factors influencing student achievement in L_2 learning (see Pimsleur, Mosberg & Morrison, 1962, for a review of the literature; the most recent investigation in Genesee, 1977). General intelligence and L_1 verbal ability are known to be closely related, and Pimsleur et al. (1962, p. 169) suggest that they should be thought of as a single factor of verbal intelligence. This factor seems to correlate about .45 with L_2 achievement (Pimsleur et al., 1962, p. 169). It was therefore hypothesized that verbal intelligence would correlate positively with correct responses in the elicitation test. It was also expected that significant relationships could be demonstrated between verbal intelligence and the error categories (omission and non-omission errors) used in this study. Since learners are of high verbal intelligence are likely to be more sensitive to linguistic variation than learners with low verbal intelligence, it was hypothesized that verbal intelligence would correlate negatively with omission errors and positively with non-omission errors.

In contrast to verbal intelligence, the effect of cognitive style on L_2 learning appears to have been little investigated. One type of cognitive variable, field dependence, has been shown to be of importance in a wide variety of learning and performance situations (Witkin, Dyk, Faterson, Goodenough & Karp, 1962). It might be expected that cognitive style variables will influence the L_2 learning

process, and in fact Hess and Shipman (1965) established relationships between cognitive style and L_1 learning. In the present study the cognitive variable closure was chosen for investigation since the "ability to reconstruct incomplete forms" (Underwood`s definition of closure, 1966, p. 179) would seem to be relevant to the learning of the morphology of the English verb system under conditions where the ability to interpret cues and fragments of conflicting evidence is at a premium (McTear, 1975 a, 1975 b). Since omission errors indicate that learners have failed to reconstruct the appropriate forms, it was hypothesized that closure would correlate negatively with omission errors, and positively with non-omission errors and correct forms.

Tests measuring verbal intelligence and closure were given to 104 learners in the ninth classes (see Section 10.3.). Non-parametric correlations were calculated between scores on the verbal intelligence and closure tests and scores for correct responses, omission errors, non-omission errors, and correct responses in the Hamburg English Test.

The results are given in Table 23. Both verbal intelligence and closure correlated significantly with English achievement as measured by correct responses to the elicitation test and to the Hamburg test. The verbal intelligence correlations were comparable with those reported by Pimsleur et al. (1962, p. 160-162). As predicted by the hypothesis, a significant, negative correlation was found between verbal intelligence and omission errors (r_c=-0.317). No other significant correlations between the individual difference factors and the error categories were found. The hypothesis of a relationship between verbal intelligence, closure and the interlanguage forms tested in this study was partially substantiated.

Table 23

Correlations of Tests Measuring Individual Differences with Correct Responses, Error Types and the Hamburg English Test

	Correct Responses	Non-omission Errors	Omission Errors	Hamburg Test
Verbal Intelligence	0.338[a]	0.1306	-0.3170[a]	0.419[a]
Closure	0.144[b]	-0.0183	-0.125	0.325[a]

[a]Significant at the .001 level

[b]Significant at the .005 level

10.9. Relationship of L_1 and L_2 Structures to Interlanguage Performance

Interlanguage researchers have often attempted to establish that different patterns of contrast and similarity between L_1 and L_2 structures lead to identifiable effects on learner interlanguages (see Section 3.2.4. and Kielhöfer, 1975, p. 126 ff.). In order to be able to investigate such patterns in the results of the elicitation test, three types of relationship between the English and German auxiliary in the surface structure of the verb phrase were defined:

(a) Non-equivalence In the present test this is the case where an auxiliary is present in English but absent in German:

Ging er nach Hause? Did he go home?

(b) Formal equivalence This is the case where an auxiliary is present in the surface structure of both the English and the German verb phrase, but where there is no marked phonetic-graphemic similarity between the surface forms of the auxiliaries:

Hast du gegessen? Did you eat?

(c) Phonetic-graphemic equivalence This is a special case of formal equivalence in which there is a partial phonetic-graphemic similarity between the surface forms of the English and German auxiliaries:

Hast du ihn gesehen? Have you seen him?

The effect of these conditions on interlanguage behavior was tested by constructing a number of scales. For each of the relationships defined above a scale was constructed in which only questions where the relationship between German stimulus and the English correct response corresponded to the defined relationship were included. In addition a number of other scales were constructed to act as controls on these primary scales. For example, for each primary scale an inverse scale was constructed which consisted of the core questions minus the questions in the primary scale. This procedure permitted a comparison between interlanguage behavior under a particular equivalence condition and interlanguage behavior under other conditions.

Altogether eight scales were constructed in order to assess the equivalence relationships:

(a) The Imperfekt Stimulus / Past Response Scale (Scale 1) consisted of those core questions containing a German Imperfekt stimulus and in which an English simple past form was expected as the correct response (Question 22, 23, 24, 45, 46, 48). Since an auxiliary is present in the correct response, but not in the stimulus, this scale is a measure of interlanguage behavior under a non-equivalence condition;

(b) The Perfekt Stimulus / Past Response Scale (Scale 2) consisted of those core questions containing a German Perfekt stimulus and in which an English simple past form was expected as the correct response (Questions 20, 21, 43, 44, 47). Since the auxiliaries in the English and German verb phrases do not have a marked phonetic-graphemic similarity, this scale is a measure of interlanguage behavior under formal equivalence conditions;

(c) The Inverse Imperfekt Stimulus / Past Response Scale (Scale 3) consisted of the core questions minus the questions in the Imperfekt Stimulus / Past Response Scale;

(d) The Inverse Perfekt Stimulus / Past Response Scale (Scale 4) consisted of the core questions minus the questions in the Perfekt Stimulus / Past Response Scale;

(e) The Perfekt Stimulus / Perfect Response Scale (Scale 5) consisted of all those core questions containing a German Perfekt stimulus and in which an English present perfect form was expected as the correct response (Question 11, 12, 35, 36). Since the German and English auxiliaries have a marked phonetic-graphemic similarity, this scale is a measure of interlanguage behavior under conditions of phonetic-graphemic equivalence;

(f) The Inverse Perfekt Stimulus / Perfect Response Scale (Scale 6) consisted of the core questions minus the questions in the Perfekt Stimulus / Perfect Response Scale;

(g) The All Perfekt Stimulus Scale (Scale 7) consisted of all the questions containing a German Perfekt stimulus. This scale contained, therefore, all the questions in the Perfekt Stimulus / Past Response and all the questions in the Perfekt Stimulus / Perfect Response Scale;

(h) The Inverse All Perfekt Stimulus Scale (Scale 8) consist of all the questions not containing a German Perfekt stimulus

As a working hypothesis it was assumed that learner interlanguage behavior would vary under different equivalence conditions. To test the hypothesis two seperate sets of Pearson correlations were computed between the scales. In the first set (Table 24) only omission errors made by the subjects were used in computing the correlations. In the second set (Table 25) only non-omission errors were used. High correlations between two scales indicate that the subjects are following a uniform strategy in spite of the different equivalence conditions given by the scales in question. Low correlations indicate a greater degree of variability in learner behavior in the areas tested.

A number of caveats must be observed in interpreting the tables. Since almost all scales correlated significantly with each other, differences between correlations must generally be regarded as relative rather than absolute. Furthermore, since the analysis of the reliability coefficients revealed a high degree of systematicity for omission errors and some degree of systematicity for non-omission errors (see Section 10.5.), it is to be expected that correlations between scales will usually be high. Finally, correlations between scales which have question in common can only be interpreted with great caution. Such scales are not used in the following analysis.

An examination of Tables 24 and 25 does seem to suggest that learner interlanguage behavior varies under different equivalence conditions, thus confirming the working hypothesis. An analysis of the omission errors shows that the Imperfekt Stimulus / Past Response Scale (non-equivalence) has a rather low correlation (r_c=0.3127) with the Perfekt Stimulus / Past Response Scale (formal equivalence). The correlations

between the Perfekt Stimulus / Perfect Response Scale (phonetic-graphemic equivalence) with scales measuring other equivalence relationships is also low (with the Imperfekt Stimulus / Past Response Scale $r_c = 0.4072$; with the Perfekt Stimulus / Past Response Scale $r_c = 0.3988$).

An analysis of correlations of the scales computed on the basis of non-omission errors reveals a slightly different picture. Conditions of phonetic-graphemic equivalence apparently have the greatest impact on learner variance. The Perfekt Stimulus / Perfect Response Scale (phonetic-graphemic equivalence) showed low correlations with both the Imperfekt Stimulus / Past Response Scale (Non-equivalence; $r_c = 0.1285$) and with the Perfekt Stimulus / Past Response Scale (Formal equivalence; $r_c = 0.372$, $p = 0.293$). Since it has already been established that learners with high achievement levels in English show a significant tendency towards non-omission errors (see Section 10.7.3.) it may be assumed that good learners are more sensitive to conditions of phonetic-graphemic equivalence than weaker learners. Learner variability on scales measuring non-equivalence and formal equivalence was not very marked. The correlation between the Imperfekt Stimulus / Past Response Scale (Non-equivalence) and the Perfekt Stimulus / Past Response Scale (Formal Equivalence) was relatively high ($r_c = 0.4897$).

10.9.1. The Effect of L_2 Structures on Interlanguage Performance

Seven scales were constructed in order to be able to test the hypothesis that different types of L_2 structures will influence learner interlanguage behavior:

(a) The Negative Scale (Scale 9) contained all those core questions in which an English negative form was required as the correct response (Question 10, 12, 16, 17, 18, 22, 23, 24, 34, 36, 40, 41, 42, 46, 48);

(b) The Inverse Negative Scale (Scale 10) contained all the core questions in which a negative form was not required;

(c) The Question Scale (Scale 11) contained all the core questions in which an English interrogative form was required as the correct response (Question 9, 11, 13, 14, 20, 22, 35, 37, 38, 39, 43, 44, 45);

(d) The Past Scale (Scale 12) contained all those core questions in which a form of the English simple past is required as the correct response (Question 20, 21, 22, 23, 24, 43, 44, 45, 46, 47, 48);

(e) The Inverse Past Scale (Scale 13) contained all those core questions in which a form of the English past was not required;

(f) The Present Simple Scale (Scale 14) contained all those core questions in which a form of the English present simple was required as the correct response (Question 13, 14, 15, 16, 17, 18, 37, 38, 39, 40, 41, 42);

(g) The Inverse Present Simple Scale (Scale 15) contained all those core questions in which a present simple form was not required. Clearly, it would have been possible to construct additional scales. However, it was considered that the actual scales chosen would give some insight into the effect of contrasting L_2 structures on interlanguage behavior.

Two seperate sets of Pearson correlations were computed between the scales. In the first set (Table 26) only omission errors were used. In the second set (Table 27) only

non-omission errors were used. These correlations are a measure of learner variation when reacting to different L_2 structures. As in the previous section, it must be emphasized that only those correlations between scales without common items can be meaningfully interpreted.

An examination of Table 26 reveals that correlations between scales involving omission errors are generally high. Hence it may be concluded that the contrasts between the L_2 structures available in the present elicitation test have little effect on the variation in omission errors. On the other hand some correlations in Table 27 suggest that L_2 structure contrasts may be influencing the variability of non-omission errors. The correlations between the Present Simple Scale and the Past Scale and between the Negative Scale and the Question Scale are low ($r_c = 0.362$ and $r_c = 0.4447$ respectively). As in Section 10.8. it may be speculated that learners with a higher level of English achievement are more sensitive to variations in L_2 structures than weaker learners.

10.9.2. Comparison of the Effects of L_1 and L_2 Structures on Interlanguage Behavior

The analysis of results in Section 10.8. strongly suggests that learner errors are influenced by patterns of similarity between the first and second language. Such patterns are, however, complex and may result in omission errors, non-omission errors, or in correct responses. This shows that it would be simplistic to interpret non-omission errors as exclusively the result of generalization strategies as is the case in Taylor (1975). Variation in so-called "generalization"

errors is also influenced by the impact of L_1 structures. Suggestions that all learner errors are to be interpreted as the result of a generalization strategy (Dulay & Burt, 1974 a) also seem implausible in the light of these results even when the presence of an overt L_1 stimulus in the present test is taken into account.

Although some evidence for the influence of L_2 structures on interlanguage behavior has been presented, their impact does appear to be as strong as that of the L_1 structures. However, the overt L_1 stimulus may be suppressing the L_2 influence and exaggerating the L_1 impact. Nevertheless, there is no evidence that a distortion of a fundamental nature is taking place.

Table 24

Correlations between Stimuli Scales computed for Omission Errors (Ninth Classes)

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7	Scale 8
Scale 1	1.0000 (0) S=0.001	0.3127 (216) S=0.001	0.6515 (216) S=0.001	0.8048 (216) S=0.001	0.4072 (216) S=0.001	0.7867 (216) S=0.001	0.4138 (216) S=0.001	0.8005 (216) S=0.001
Scale 2	0.3127 (216) S=0.001	1.0000 (0) S=0.001	0.6009 (216) S=0.001	0.4214 (216) S=0.001	0.3988 (216) S=0.001	0.5541 (216) S=0.001	0.9058 (216) S=0.001	0.3931 (216) S=0.001
Scale 3	0.6515 (216) S=0.001	0.6009 (216) S=0.001	1.0000 (0) S=0.001	0.9573 (216) S=0.001	0.5425 (216) S=0.001	0.9739 (216) S=0.001	0.6842 (216) S=0.001	0.9441 (216) S=0.001
Scale 4	0.8048 (216) S=0.001	0.4214 (216) S=0.001	0.9573 (216) S=0.001	1.0000 (0) S=0.001	0.5198 (216) S=0.001	0.9823 (216) S=0.001	0.5442 (216) S=0.001	0.9928 (216) S=0.001
Scale 5	0.4072 (216) S=0.001	0.3988 (216) S=0.001	0.5425 (216) S=0.001	0.5198 (216) S=0.001	1.0000 (0) S=0.001	0.4536 (216) S=0.001	0.7498 (216) S=0.001	0.4137 (216) S=0.001
Scale 6	0.7867 (216) S=0.001	0.5541 (216) S=0.001	0.9739 (216) S=0.001	0.9823 (216) S=0.001	0.4536 (216) S=0.001	1.0000 (0) S=0.001	0.6094 (216) S=0.001	0.9832 (216) S=0.001
Scale 7	0.4138 (216) S=0.001	0.9058 (216) S=0.001	0.6842 (216) S=0.001	0.5442 (216) S=0.001	0.7498 (216) S=0.001	0.6094 (216) S=0.001	1.0000 (0) S=0.001	0.4748 (216) S=0.001
Scale 8	0.8005	0.3931	0.9441	0.9928	0.4137	0.9832	0.4748	1.0000

Table 25

Correlations between Stimuli Scales computed for Non-omission Errors (Ninth Classes)

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7	Scale 8
Scale 1	1.0000 (0) S=0.001	0.4897 (216) S=0.001	0.5215 (216) S=0.001	0.7453 (216) S=0.001	0.1285 (216) S=0.030	0.7836 (216) S=0.001	0.4678 (216) S=0.001	0.7690 (216) S=0.001
Scale 2	0.4897 (216) S=0.001	1.0000 (0) S=0.001	0.6607 (216) S=0.001	0.4040 (216) S=0.001	0.0372 (216) S=0.293	0.7103 (216) S=0.001	0.8291 (216) S=0.001	0.4277 (216) S=0.001
Scale 3	0.5215 (216) S=0.001	0.6607 (216) S=0.001	1.0000 (0) S=0.001	0.8854 (216) S=0.001	0.3929 (216) S=0.001	0.8980 (216) S=0.001	0.7539 (216) S=0.001	0.8331 (216) S=0.001
Scale 4	0.7453 (216) S=0.001	0.4040 (216) S=0.001	0.8854 (216) S=0.001	1.0000 (0) S=0.001	0.4103 (0216) S=0.001	0.8938 (0216) S=0.001	0.5561 (0216) S=0.001	0.9521 (0216) S=0.001
Scale 5	0.1285 (216) S=0.030	0.0372 (216) S=0.293	0.3929 (216) S=0.001	0.4103 (216) S=0.001	1.0000 (0) S=0.001	0.1011 (216) S=0.069	0.5895 (216) S=0.001	0.1119 (216) S=0.051
Scale 6	0.7836 (216) S=0.001	0.7103 (216) S=0.001	0.8980 (216) S=0.001	0.8938 (216) S=0.001	0.1011 (216) S=0.069	1.0000 (0) S=0.001	0.6307 (216) S=0.001	0.9401 (216) S=0.001
Scale 7	0.4678 (216) S=0.001	0.8291 (216) S=0.001	0.7539 (216) S=0.001	0.5561 (216) S=0.001	0.5895 (216) S=0.001	0.6307 (216) S=0.001	1.0000 (0) S=0.001	0.4083 (216) S=0.001
Scale 8	0.7690 (216) S=0.001	0.4277 (216) S=0.001	0.8331 (216) S=0.001	0.9521 (216) S=0.001	0.1119 (216) S=0.051	0.9401 (216) S=0.001	0.4083 (216) S=0.001	1.0000 (0) S=0.001

Table 28

Correlations between Target Scales computed for Omission Errors (Ninth Classes)

	Scale 9	Scale 10	Scale 11	Scale 12	Scale 13	Scale 14	Scale 15
Scale 9	1.0000	0.5722	0.6396	0.8117	0.8536	0.8266	0.8423
	(0)	(216)	(216)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 10	0.5722	1.0000	0.9459	0.6939	0.8581	0.7910	0.8048
	(216)	(0)	(216)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 11	0.6396	0.9459	1.0000	0.6941	0.8763	0.8384	0.7850
	(216)	(216)	(0)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 12	0.8117	0.6939	0.6941	1.0000	0.6849	0.6488	0.9117
	(216)	(216)	(216)	(0)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 13	0.8536	0.8581	0.8763	0.6849	1.0000	0.9469	0.8363
	(216)	(216)	(216)	(216)	(0)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 14	0.8266	0.7910	0.8384	0.6488	0.9469	1.0000	0.6988
	(216)	(216)	(216)	(216)	(216)	(0)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 15	0.8423	0.8048	0.7850	0.9117	0.8363	0.6988	1.0000
	(216)	(216)	(216)	(216)	(216)	(216)	(0)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001

Table 27

Correlations between Target Scales computed for Non-omission Errors (Ninth Classes)

	Scale 9	Scale 10	Scale 11	Scale 12	Scale 13	Scale 14	Scale 15
Scale 9	1.0000	0.3611	0.4447	0.7001	0.6757	0.5588	0.7737
	(0)	(216)	(216)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 10	0.3611	1.0000	0.9312	0.6906	0.6478	0.6030	0.7179
	(216)	(0)	(216)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 11	0.4447	0.9312	1.0000	0.6774	0.6825	0.6109	0.7285
	(216)	(216)	(0)	(216)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 12	0.7001	0.6906	0.6774	1.0000	0.3553	0.3629	0.9003
	(216)	(216)	(216)	(0)	(216)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 13	0.6757	0.6478	0.6825	0.3553	1.0000	0.8192	0.5735
	(216)	(216)	(216)	(216)	(0)	(216)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 14	0.5588	0.6030	0.6109	0.3629	0.8192	1.0000	0.3336
	(216)	(216)	(216)	(216)	(216)	(0)	(216)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001
Scale 15	0.7737	0.7179	0.7285	0.9003	0.5735	0.3336	1.0000
	(216)	(216)	(216)	(216)	(216)	(216)	(0)
	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001	S=0.001

10.10. The Validity of the Elicitation Test

The problem of validating elicitation tests has already been discussed in Chapter 9. Three major methods of test validation were sketched there: criterion-related validation, content validation, and construct validation.

An estimate of criterion-related validity was obtained by computing a non-parametric correlation coefficient between the results of the Hamburg grammar subtest and the correct responses to the elicitation test of those pupils who had also taken the subtest. The resulting coefficient (r_c=0.5709) can be considered highly satisfactory since a correlation of 0.60 between at test and a criterion is regarded as "high" in testing literature (Cronbach, 1970, p. 135).

An impression of the content validity of the elicitation test can be gained by comparing items used in the test with a sample of learner utterances produced. The learners in these experiments were also taken from Hauptschulen, and their responses show that many or most of the items in the elicitation test could be produced by learners in a freer situation (see Appendix V).

An analysis of group and interindividual variation and the stability of the results points to the construct validity of the test. The results of the analysis of individual differences are not surprising; for example, the significant relationship between weaker learners and omission errors is foreshadowe in a number of ealier studies (e.g. Naiman, 1974; Taylor, 1975). The results of the test seem to fit well in the "normological network" (Michel,1964, p. 57) established by earlier interlanguage studies.

10.11. Overview

The previous sections in this chapter have attempted to validate some of the basic hypotheses of the interlanguage theory by analyzing learners` use of a restricted linguistic subsystem. It has already been pointed out that the generalizability of conclusions is restricted by the nature of the population tested, by the linguistic material used in the test, and by the testing methods used. Given these limiting factors, the results of this investigation confirm the usefulness of the interlanguage theory as an instrument for the investigation of the processes in L_2 learning.

In the introduction (Chapter 1) the concept of systematicity was defined as being of central importance to interlanguage theory; in Chapter 6 it was noted that critics of the interlanguage theory have been sceptical about the tenability of this concept. The investigation of systematicity in this study (Section 10.6.) showed that correct responses and one error type (omission errors) have a high degree of systematicity. This result confirms the assertion of interlangua theorists that learners` utterances are to be regarded as a system. By using reliability coefficients to measure systematicity it proved possible to measure interlanguage systematicity on a continuous scale rather than using arbitrary cut-off criteria as in previous studies (see Section 5.6. for a discussion). This approach seems intuitively correct, since measures of interlanguage systematicity must be sensitive to variations caused by psychological and linguistic factors. It was noteworthy that the degree of systematicity in the ninth classes (i.e. at a later stage of learning) was hardly less than in the seventh classes.

Establishing interlanguage systematicity is an important prerequisite for investigating changes in learners` IL systems over time (interlanguage stability). In the present study two approaches to interlanguage stability were adopted. By comparing the results of the subjects in the seventh classes on the test and retest the short-term stability of the linguistic structures tested could be calculated. As was hypothesized, learners were less consistent in their use of structures over a period of time than at one point time. Long-term IL stability could only be measured indirectly by a cross-sectional comparison of results of the seventh and ninth classes. No significant differences between the two groups were found, so it was concluded that interlanguages of slow learners manifest high degrees of stability over time ("fossilization").

The hypothesis that individual differences between learners would influence variation in their IL systems was tested in Section 10.8. Individual differences between learners` level of English achievement were found to have significant effects on interlanguage systems. The interlanguage systems of learners taught in extension courses (Erweiterungskurse) were found to differ significantly from those of learners taught in basic courses (Grundkurs). Similarly, the interlanguage systems of learners scoring an above average number of correct responses on the elicitation test were found to differ significantly from the interlanguage systems of learners with a below average score. The level of English achievement seems to influence the variability of learner interlanguages to a greater degree than the length of time spent studying the language (cf. the results of the investigation of learner stability over time).

Sex and differences in verbal intelligence also had a significant influence on the variability of some aspects of learner interlanguage systems.

These results indicate strongly that more attention should be paid to individual differences between learners in future interlanguage research. An approach using the methods of differential psychology may uncover significant differences between the interlanguages of different groups of learners. Since the results of research using such an approach would be more specific than is the case at present, interlanguage research would become more immediately relevant to the needs of L_2 teaching.

The impact of L_1 and L_2 structures on the variability of learners' interlanguage systems has been analyzed in Section 10.9. Contrasts between different types of overt L_1 stimuli affected IL variability more markedly than contrasts between L_2 target forms. The influence of the L_1 extended to structures which have previously been classified as overgeneralizations, i.e. exclusively the result of L_2 interference. Thus, learner selection of non-omission errors under conditions of phonetic-graphemic equivalence between the L_1 stimulus and the L_2 target form had low correlations with learner selection of non-omission errors under different conditions. It would seem that Kielhöfer (1975) is correct in claiming that "L_1-Einheiten oder Regeln ... werden nicht direkt nach L_2 transferiert, sondern es entsteht ein grammatikalisches Mischsystem L_1/L_2" (p. 93; cf. Ickenroth, p. 3). In other words, although the IL surface structure form is an element of the L_2, its selection has been reinforced or controlled by elements from the L_1. Given that many so-called overgeneralizations cannot be interpreted

as being exclusively the result of L_2 interference, any IL classification scheme which neglects this has only a limited validity.

This investigation shows that IL theory provides a legitimate way of approaching problems of L_2 learning. The theory is, however, a recent one, and many areas need clarification or further investigation. The results of the present study suggest that three major fields may be singled out for further work. Firstly, more attention must be given to operationalizing and investigating the concepts of IL systematicity and stability. Secondly, the effect of individual differences on IL systems must be clarified, in particular the effect of differences in the level of L_2 achievement. Finally, the problem of the classification of IL utterances should not be neglected. A decreased use of psychological categories, such as L_1 transfer and overgeneralization, and increased emphasis on the raw data of IL studies, learner surface structure forms, may be called for.

11. Interlanguage Theories and Teaching Second Languages

Interlanguage research may be regarded as an attempt to combine insights and methods from a number of different disciplines; developmental psychology, differential psychology, the psychology of transfer, and applied linguistics have all played a part in the development of interlanguage theory. The aim of this theory has been to analyze and explain characteristics of learner L_2 language systems. It is, therefore, to be expected that a unified IL theory will be more directly relevant to the needs of L_2 teachers than any one of the disciplines which have contributed to its make-up. In fact, the interest in interlanguage studies can be partly explained in terms of the disillusionment increasingly felt with theoretical linguistics and the psychology of learning as adequate accounts of the L_2 learning process (e.g. Bieritz & Denig, 1974, p. 453 ff.).

If it is to live up to the hopes placed in it, IL research can be expected to make contributions to the construction of L_2 curricula and should help in the choice of appropriate teaching methods. Knowledge of learner L_2 systems will guide the sequencing of L_2 structures and help to decide which items should be included in a course. Knowledge of L_2 learning processes will influence teachers` choice of methods. In the present state of the art it is difficult to know whether IL research will fulfil these promises. However, even assuming the existence of accurate data on learner ILs, it must be borne in mind that this data will only be one of the factors influencing the form of L_2 curricula and teaching methods. Clearly the objective of achieving at least a minimal degree of communicative competence in

the L_2 will continue to be of overriding importance in the construction of school curricula. This objective implies that some L_2 structures must be given their due in school curricula. For instance, L_2 structures with a high level of frequency will have to be taught even if IL research shows that they are difficult for learners. Thus, it is difficult to visualize a curriculum for English as an L_2 which excludes the present continuous, even though this form may be a problem for slow learners in German schools.

In order to be able to make a sensible decision in such cases, more knowledge is needed about the way in which IL speakers communicate with native speakers and about the way native speakers react to deviant ILs. There is some evidence that even learners making a large number of errors can communicate with native speakers quite effectively (e.g. Lukowski & Solmecke, 1973, p. 21). Although this phenomenon can be partly explained by the redundancy of natural languages, it may be that some learners develop global communication skills which could hardly have been predicted from the discrete linguistic subsystems available to them. In most IL research there is no measure of the communicative competence of the subjects and therefore no possibility of relating IL deviancy to L_2 communicative competence (for an exception see Olsson, 1972, 1973).

In the construction of L_2 curricula IL research is one factor among others. Similarly, in the choice of teaching methods the results of IL research must be balanced against other considerations such as long-term educational objectives and the competence and personality of the teacher.

These arguments have been intended to suggest some of the limitations on the role of IL research in L_2 teaching. Bearing these limitations in mind, three major results of the present study would seem to be relevant to teachers of slow learners: (a) the evidence for the existence of a high degree of fossilization over time in the linguistic subsystem tested, (b) the evidence for systematic individual variation in the linguistic subsystem tested, and (c) the evidence for the existence for linguistic Mischsystem formed under the impact L_1 and L_2 transfer. The implications of these results are discussed below.

A cross-sectional analysis of the results obtained in the seventh and ninth classes showed that for this population the linguistic subsystem tested remains comparatively stable over time. In the face of this fossilization a choice of strategies is available to the teachers of these learners, namely either to use systematic remedial teaching in the hope of eventually eradicating the fossilized forms or to pursue a policy of benign neglect by correcting errors as they occur. Since the latter policy accepts defeat, it would appear desirable to develop systematic programs of remedial materials. Remedial teaching does, however, have a number of drawbacks. It is unclear whether remedial teaching pays off in cost benefit terms because fossilized forms often turn out to be highly resistant to remedial programs. Furthermore, remedial programs are often associated with past failures in the minds of the learners. Learners may not be aware that they are making errors and therefore not understand the rationale of a remedial program. Feelings of déjà vu may lead to boredom and the rejection of the program.

A cost benefit analysis of remedial teaching might be given by empirical L_2 research. Overcoming learner resistance to remedial programs will involve a combination of teaching techniques. First of all learners must be made aware of the errors they are making. This might be achieved by recording and playing back samples of the learners` own speech, by keeping lists of the learners` errors, and by having learners correct each other`s work. Learners should also be sensitivized to the role of errors in the communicative process. This might be achieved by a tactful discussion of the problem of understanding foreign workers and tourists attempting to use the learners` L_1 or by a suitably simplified discussion of research into native speakers` tolerance for the errors made by foreigners. It should, however, also be pointed out to the learners that errors are a natural part of the L_2 learning process, and that other learners make similar errors. This information should help to reduce learner anxiety about using the L_2. Remedial programs should also try to motivate learners by varying the approach used when the material was first presented. Thus, if the first presentation emphasized inductive learning, the remedial phase might take a deductive approach. The use of different types of media would also help to distinguish between the initial presentation and the remedial phase. Because learners will not all have achieved the same degree of proficiency and will also be making different types of errors, individualized materials and group work will be given more emphasis in the remedial phase.

Knowledge about the extent to which IL structures have become fossilized will aid those teachers who decide not to employ a systematic remedial program, in the sense that their tolerance towards learner errors will be increased. This does not necessarily mean that learner errors will be left uncorrected. However, informed teachers will be able to react with insight and patience to the phenomenon of learner error. In learning contexts where global communication skills are being trained teachers may choose to correct the fossilized errors of learners relatively infrequently. Knowing that these errors are stabilized forms and therefore resistant to correction, teachers may prefer to note them down for treatment at a later stage.

Increasing knowledge of the fossilized systems of slower learners may also have consequences for the school curriculum. The empirical research presented in Chapter 10 tested only a limited range of forms and tenses. These structures will form a part of even a minimal English curriculum. Yet learners obviously had considerable difficulties in using even this limited range of structures. It could therefore be argued that range of tenses taught to German slow learners should be reduced and that efforts should be focused on getting a limited number of structures right (cf. Speight, 1977, p. 157). However, as pointed out above, the analysis of learner English is only one factor in such decisions. Furthermore, a complete study of the verb system of German slow learners does not at present exist.

The evidence for systematic individual variation in the linguistic subsystem tested in the empirical research was strong (see Section 10.8.). Individual differences were

shown to affect the variability of learner ILs. The evidence for the impact of different levels of achievement in English on learner ILs was particularly convincing. If this result is confirmed by future research, it would imply the need for more attention to be paid to the needs of the individual learner. These needs might be catered for by increased use of individualized methods, group work, or by various types of streaming methods. However, IL research alone would not be able to make the final choice between these forms of differentiation.

Further work on the relationship between overall L_2 proficiency and the forms of learners` ILs would be particular useful for the teacher.

In the case of the results from the present investigation, knowing that good learners tend to make non-omission errors and that poor learners tend to make omission errors help the teacher plan the presentation, correction, and remedial teaching of forms where an obligatory auxiliary is present. The teacher knows, for example, that poor learners will require special help which emphasizes the presence of an auxiliary form, while the good learners will be able to cope with, and will require, learning tasks which emphasize the differences between various types of auxiliary forms. The teacher will also know that when weaker learners begin to use auxiliaries, this represents a breakthrough for them.

Finally, the evidence for the influence of L_1 and L_2 transfer on the formation of learner ILs suggests that IL research in this area will be of value to the teacher. The present study was restricted to effect of morphological and formal factors on IL variability; semantic relationships were excluded. It is, however, highly probable that the absence

or presence of semantically equivalent forms in the English and German verb systems is a major factor in transfer. Thus, the German Perfekt tense refers to both events in the past and to events with present relevance, whereas English has two tenses, the simple past and the present perfect, each of which covers only one of these meanings. Since the German Perfekt and the English present perfect have a relationship of phonetic-graphemic equivalence on the morphological level (see Section 10.9.), it is hardly surprising that German learners often extend the English present perfect to cover meanings included in the range of the German Perfekt: I have seen him yesterday *. Considering the complexity of this example of interference the safest course for the L_2 teacher intent on easing his pupils` task is to remove the potential causes of interference from his teaching methods and materials, as far as this is possible. L_1 transfer can be reduced by using a monolingual approach to L_2 teaching (see Butzkamm, 1973 and Dodson, 1967, for a different viewpoint). The reduction of L_2 interference is more complex. A number of suggestions relating to the teaching of the English verb system have been made by Edmonson, House, Kaspar and McKeown (1977; for recommendation on the teaching of the tenses used in the elicitation test see p. 57 ff., p. 70 ff., p. 76 ff., p. 91). The authors associate each tense form with a basic meaning and several acquired meanings. Each meaning should be introduced seperately. The total range of meanings associated with any one tense form should be introduced gradually in a planned sequence. Interference between the meanings of different tense forms can be reduced by unambiguously associating each tense form with one context. Thus, "if pictures or wall-charts are used, they should be unambiguously associated with one tense" (p. 61).

The use of adverbial props is legitimate in the early phases of teaching a tense form, for example the use of just when introducing the present perfect. In the later stages the teacher will have to show that the props are unnecessary, otherwise they may become a source of interference (p. 60).

This discussion has suggested that IL research oriented towards investigating the ILs of individual learners may be able to give L_2 teachers practical help. It is to be expected that future IL research will continue to contribute to the development of L_2 teaching.

Appendix I : The Multiple-Choice Elicitation Test

Arbeitsanweisung

Wir üben jetzt an einem Beispiel, wie die folgenden Aufgaben bearbeitet werden sollen:

Übungsbeispiel

Wir müssen jeden Tag zur Schule gehen.

(a) We musts go to school every day.
(b) We must going to school every day.
(c) We must go to school every day.
(d) We´re must go to school every day.
(e) We musts going to school every day.

Lest Euch den deutschen Satz durch und die darunter stehenden englischen Sätze. Einer von den englischen Sätzen ist die richtige Übersetzung. Bitte, macht ein Kreuz durch den Buchstaben vor dem richtigen englischen Satz.

Gerade spielt unsere Mannschaft Fußball. 1.

(a) Our team don´t playing football now.
(b) Our team doesn´t playing football now.
(c) Our team playing football now.
(d) Our team not playing football now.
(e) Our team is playing football now.

Toms Eltern wohnen in Dortmund. 2.

(a) Tom´s parents do living in Dortmund.
(b) Tom´s parents living in Dortmund.
(c) Tom´s parents live in Dortmund.
(d) Tom´s parents are live in Dortmund.
(e) Tom´s parents lives in Dortmund.

Wir stehen oft spät auf. 3.

(a) We often get up late.
(b) We often getting up late.
(c) We often gets up late.
(d) We often are gets up late.
(e) We often are get up late.

Mike kann gut Klavier spielen. 4.

(a) Mike can playing the piano well.
(b) Mike can play the piano well.
(c) Mike cans play the piano well.
(d) Mike can plays the piano well.
(e) Mike does can play the piano well.

Frank darf seine Hausaufgaben nicht vergessen. 5.

(a) Frank doesn´t must forget his homework.
(b) Frank mustn´t forgetting his homework
(c) Frank mustn´t forget his homework.
(d) Frank mustsn´t forgets his homework.
(e) Frank mustn´t forgets his homework.

Muß Inge sich einen Hut kaufen? 6.

(a) Must Inge bought a hat?
(b) Did Inge must buy a hat?
(c) Musts Inge buy a hat?
(d) Does Inge must buy a hat?
(e) Must Inge buy a hat?

Deine Mutter hat uns gestern eingeladen. 7.

(a) Your mother invited us yesterday.
(b) Your mother invite us yesterday.
(c) Your mother invites us yesterday.
(d) Your mother does invited us yesterday.
(e) Your mother inviting us yesterday.

Martin kaufte heute morgen eine Zeitung. 8.

(a) Martin buying a newspaper this morning.
(b) Martin buy a newspaper this morning.
(c) Martin does bought a newspaper this morning.
(d) Martin bought a newspaper this morning.
(e) Martin boughts a newspaper this morning.

Öffnet Billy gerade das Fenster? 9.

(a) Is Billy opening the window now?
(b) Is Billy open the window now?
(c) Is Billy the window opening now?
(d) Opens Billy the window now?
(e) Opening Billy the window now?

Martin trägt keine Jacke im Augenblick. 10.

(a) Martin wearing no jacket at the moment.
(b) Martin isn't wearing a jacket at the moment.
(c) Martin doesn't wearing a jacket at the moment.
(d) Martin not wearing a jacket at the moment.
(e) Martin don't wearing a jacket at the moment.

Hat dein Vater dir Geld gegeben? 11.

(a) Has your father given you some money?
(b) Give you your father some money?
(c) Has your father giving you some money?
(d) Has your father give you some money?
(e) Gave you your father some money?

Heute habe ich meine Haare nicht gewaschen. 12.

(a) I haven't wash my hair today.
(b) I haven't washed my hair today.
(c) I wash not my hair today.
(d) I washing not my hair today.
(e) I didn't have wash my hair today.

Triffst du Peter jeden Tag? 13.

(a) Do you meeting Peter every day?
(b) Meet you Peter every day?
(c) Do you meet Peter every day?
(d) Meets you Peter every day?
(e) Are you meet Peter every day?

Wäscht deine Mutter die Kleider jeden Montag? 14.

(a) Does your mother washes the clothes every Monday?
(b) Washes your mother the clothes every Monday?
(c) Wash your mother the clothes every Monday?
(d) Does your mother washing the clothes every Monday?
(e) Does your mother wash the clothes every Monday?

Schreibt Hans manchmal Briefe? 15.

(a) Is Hans sometimes writes letters?
(b) Write Hans sometimes letters?
(c) Does Hans sometimes write letters?
(d) Does Hans sometimes writing letters?
(e) Writes Hans sometimes letters?

Mein Vater liest keine Zeitungen. 16.

(a) My father doesn't read newspapers.
(b) My father doesn't reads newspapers.
(c) My father reads not newspapers.
(d) My father isn't read newspapers.
(e) My father read not newspapers.

In England regnet es nicht jeden Tag. 17.

(a) It don't rain every day in England.
(b) It doesn't rain every day in England.
(c) It rains not every day in England.
(d) It rain not every day in England.
(e) It doesn't rains every day in England.

Mary und Billy trinken morgens keinen Tee. 18.

(a) Mary and Billy doesn't drink tea in the morning.
(b) Mary and Billy not drinking tea in the morning.
(c) Mary and Billy don't drink tea in the morning.
(d) Mary and Billy doesn't drank tea in the morning.
(e) Mary and Billy not drinking tea in the morning.

Hast du mir einen Brief geschrieben? 19.

(a) Did you write me a letter?
(b) Writes you me a letter?
(c) Wrote you me a letter?
(d) Did you wrote me a letter?
(e) Write you me a letter?

Hat Peter gestern abend gut geschlafen? 20.

(a) Sleep Peter well last night?
(b) Did Peter sleeps well last night?
(c) Slept Peter well last night?
(d) Did Peter sleep well last night?
(e) Did Peter slept well last night?

Hast du Tom gestern gesehen? 21.

(a) Do you saw Tom yesterday?
(b) See you Tom yesterday?
(c) Saw you Tom yesterday?
(d) Did you saw Tom yesterday?
(e) Did you see Tom yesterday?

Letzte Woche besuchten wir unsere Tante nicht. 22.

(a) We didn't visit our aunt last week.
(b) We not visited our aunt last week.
(c) We don't visited our aunt last week.
(d) We not visits our aunt last week.
(e) We didn't visited our aunt last week.

Gestern abend schlief Peter nicht gut. 23.

(a) Peter didn't slept well yesterday evening.
(b) Peter slept not well yesterday evening.
(c) Peter sleep not well yesterday evening.
(d) Peter didn't slept well yesterday evening.
(e) Peter didn't sleep well yesterday evening.

Gestern tranken wir keine Limonade. 24.

(a) We don't drink any lemonade yesterday.
(b) We didn't drank any lemonade yesterday.
(c) We not drink any lemonade yesterday.
(d) We drank no lemonade yesterday.
(e) We didn't drink any lemonade yesterday.

Vater raucht im Moment. 25.

(a) Father smoke at the moment.
(b) Father is smokes at the moment.
(c) Father does smoking at the moment.
(d) Father smoking at the moment.
(e) Father is smoking at the moment.

Martin ist dabei, die Tür zu schließen. 26.

(a) Martin is closing the door.
(b) Martin close the door.
(c) Martin closing the door.
(d) Martin does closing the door.
(e) Martin is close the door.

Roger sitzt jeden Tag zu Hause. 27.

(a) Every day Roger going sit at home.
(b) Every day Roger is sit at home.
(c) Every day Roger sitting at home.
(d) Every day Roger sits at home.
(e) Every day Roger sit at home.

Ich werde ihm das Geld geben. 28.

(a) I giving him the money.
(b) I will giving him the money.
(c) I will gives him the money.
(d) I do will give him the money.
(e) I will give him the money.

Können Sie ihn verstehen? 29.

(a) Cans you understand him?
(b) Do you can understand him?
(c) Can you understanding him?
(d) Can you understand him?
(e) Are you can understand him?

Heute können die Schüler nicht in die Stadt fahren. 30.

(a) Today the pupils can't go into town.
(b) Today the pupils can't going into town.
(c) Today the pupils cannot going into town.
(d) Today the pupils don't can go into town.
(e) Today the pupils can't going into town.

Peter ist früh nach Hause gekommen. 31.

(a) Peter arrived home early.
(b) Arrived Peter home early?
(c) Peter arrives home early.
(d) Peter is arrived home early.
(e) Peter does arrived home early.

Der Zug kam gestern spät. 32.

(a) The train came late yesterday.
(b) The train comes late yesterday.
(c) The train does came late yesterday.
(d) The train is comes late yesterday.
(e) The train come late yesterday.

Bringt dein Freund den Koffer nach Hause? 33.

(a) Brings your friend your case home?
(b) Bringing your friend your case home?
(c) Is your friend bringing your case home?
(d) Bring your friend your case home?
(e) Is your friend bring your case home?

Meine Eltern warten nicht auf mich. 34.

(a) My parents aren't wait for me.
(b) My parents not waiting for me.
(c) My parents aren't waiting for me.
(d) My parents not wait for me.
(e) My parents don't waiting for me.

Hast du Peter heute geholfen?

(a) Do you helped Peter today?
(b) Helped you Peter today?
(c) Have you helping Peter today?
(d) Help you Peter today?
(e) Have you helped Peter today?

Martin hat das Fenster nicht zerbrochen. 36.

(a) Martin hasn't breaking the window.
(b) Martin not breaking the window.
(c) Martin isn't breaking the window.
(d) Martin hasn't broken the window.
(e) Martin breaking not the window.

Wäschst Du Vaters Auto jeden Tag? 37.

(a) Washing you father´s car every day?
(b) Do you wash father´s car every day?
(c) Did you washed father´s car every day?
(d) Wash you father´s car every day?
(e) Did you washing father´s car every day?

Gehst du jeden Samstag ins Kino? 38.

(a) Do you goes to the cinema every Saturday?
(b) Go you to the cinema every Saturday?
(c) Do you go to the cinema every Saturday?
(d) Goes you to the cinema every Saturday?
(e) Do you going to the cinema every Saturday?

Spielst du jeden Tag Fußball? 39.

(a) Do you playing football every day?
(b) Plays you football every day?
(c) Do you played football every day?
(d) Play you football every day?
(e) Do you play football every day?

Frank arbeitet heute nicht. 40.

(a) Frank not works today.
(b) Frank work not today.
(c) Frank isn´t work today.
(d) Frank doesn´t work today.
(e) Frank doesn´t works today.

Wir gehen nicht jeden Tag zur Schule. 41.

(a) We not go to school every day.
(b) We don't go to school every day.
(c) We go not to school every day.
(d) We doesn't go to school every day.
(e) We doesn't going to school every day.

Mein Vater fährt nicht sehr oft mit der Bahn. 42.

(a) My father don't often travels by rail.
(b) My father doesn't often travel by rail.
(c) My father not often travel by rail.
(d) My father doesn't often travels by rail.
(e) My father not often travels by rail.

Hat Martin sein Fahrrad letzte Woche verkauft? 43.

(a) Did Martin sell his bike last week?
(b) Is Martin sell his bike last week?
(c) Sold Martin his bike last week?
(d) Sell Martin his bike last week?
(e) Did Martin sold his bike last week?

Hast du gestern mit Tom geredet? 44.

(a) Talk you to Tom yesterday?
(b) Do you talked to Tom yesterday?
(c) Talked you to Tom yesterday?
(d) Did you talked to Tom yesterday?
(e) Did you talk to Tom yesterday?

Gabst du ihm heute die Briefe? 45.

(a) Gave you him the letters today?
(b) Give you him the letters today?
(c) Did you gave him the letters today?
(d) Did you give him the letters today?
(e) Did you gives him the letters today?

Gestern ging ich nicht in die Kirche. 46.

(a) I don't went to church yesterday.
(b) I go not to church yesterday.
(c) I didn't went to church yesterday.
(d) I wentn't to church yesterday.
(e) I didn't go to church yesterday.

Peter hat die Tür nicht geschlossen. 47.

(a) Peter not closed the door.
(b) Peter doesn't close the door.
(c) Peter not close the door.
(d) Peter didn't closed the door.
(e) Peter didn't close the door.

Gestern kam mein Bruder nicht nach Hause. 48.

(a) My brother didn't came home yesterday.
(b) My brother didn't come home yesterday.
(c) My brother came not home yesterday.
(d) My brother comed not home yesterday.
(e) My brother don't came home yesterday.

Appendix II : The Hamburg English Test (Section 5)

Deutsche Schultests

Hamburger Englischtest HET 6+

Teil 5

Vor- und Zuname _____ Klasse _____

A. Ordne die folgenden Wörter zu einem sinnvollen Satz!

Beispiel: a – Peter – write – can – letter

Peter can write a letter.

Übungsaufgabe: the – Mary – opened – has – window

_____

B. Setze die Tätigkeitswörter so ein, wie in den Beispielen angegeben!

Beispiel 1: to walk – The man *walks* along the street.

Übungsaufgabe a: to put – Peter _____ the book on the desk.

Beispiel 2: to sing – Mary is *singing* a song.

Übungsaufgabe b: to eat – Kate is _____ her breakfast.

Beispiel 3: to tell – Grandmother has *told* me a story.

Übungsaufgabe c: to give – John has _____ me his pencil.

C. Setze von den angegebenen Wörtern jeweils das richtige in die Lücke ein!

Beispiel: I am going *to* school.
at – in – to – for – by

Übungsaufgabe: The picture is hanging _____ the wall.
at – on – about – of – by

D. Bilde aus jedem Satz erst eine Frage und dann eine verneinende Antwort!

Beispiel 1: He can speak English.

Can he speak English? No, he cannot speak English.

Beispiel 2: We go home now.

Do we go home now? No, we don't go home now.

Übungsaufgabe a: Mother has asked him.

_____

Übungsaufgabe b: Peter eats an apple.

_____

A. Ordne die folgenden Wörter zu einem sinnvollen Satz!

Beispiel: a – Peter – write – can – letter

Peter can write a letter.

1 Aufgaben: very – comes – late – home – he

2 like – early – get – I – up – to

3 me – they – like – don't

B. Setze die Tätigkeitswörter so ein, wie in den Beispielen angegeben! Achte dabei auf die richtige Zeitform!

Beispiel 1: to walk – The man *walks* along the street.

4 Aufgaben: to do – Betty _____ her homework in the afternoon.

5 to hurry – Every morning Billy _____ to school.

6 to meet – The boys always _____ in the playground.

Beispiel 2: to sing – Mary is *singing* a song.

7 Aufgaben: to shut – Jane is just _____ the door.

8 to take – Father is _____ me to school by car.

9 to carry – Jim is _____ a box on his shoulder.

Beispiel 3: to tell – Grandmother has *told* me a story.

10 Aufgaben: to eat – John has _____ too much of the cake.

11 to see – I have _____ the dog under the table.

12 to buy – I have _____ some flowers for Mummy.

Wenn Du auf dieser Seite fertig bist, dann arbeite gleich auf der nächsten Seite oben weiter!

Setze von den angegebenen Wörtern jeweils das richtige in die Lücke ein!

Beispiel: I am going ___to___ school.
at - in - to - for - by

Aufgaben:

He is coming _____ car. 13
with - in - on - at - by

We have learned this _____ school. 14
in - on - at - by - for

His birthday is _____ March 25th. 15
in - on - at - by - for

Look _____ this picture! 16
to - by - on - at - of

They sit down _____ the table for dinner. 17
on - by - in - at - to

Father is _____ home. 18
for - by - in - to - at

We are staying here _____ three weeks. 19
at - to - by - on - for

The basket is full _____ apples. 20
with - from - of - by - on

We are waiting _____ you. 21
of - off - for - about - at

We watched the game _____ more than two hours. 22
at - by - from - for - to

_____ is your name? 23
Whose - What - Who - When - Why

_____ of you understands this exercise? 24
Which - What - Who - Where - Whom

_____ are you meeting at four o'clock? 25
To whom - Whom - When - What - Which

_____ are you writing? 26
Which - Whose - Who - Whom - To whom

_____ pencil is this, Tom's or Harry's? 27
What - Whom - Whose - When - Which

Do you know where _____ doll is? 28
me - my - you - him - myself

Wenn Du auf dieser Seite fertig bist, dann arbeite gleich auf der nächsten Seite oben weiter!

29 I have seen Kate. I met _____ at the station.
she – they – us – her – herself

30 I saw _____ in the street.
they – them – their – she – he

31 He has written so many letters, but I didn't get _____
some – any – much – few – each

32 33 "Have you _____ toys?" – "No, I have only very _____"
every – much – many – little – few
(Schreibe in jede Lücke eines der angegebenen Wörter!)

D. Bilde aus jedem Satz erst eine Frage und dann eine verneinende Antwort!

Beispiel 1: He can speak English.

Can he speak English? No, he cannot speak English.

Beispiel 2: We go home now.

Do we go home now? No, we don't go home now.

Aufgaben: They can go now.

34 35 _____

He is very late.

36 37 _____

They go swimming.

38 39 _____

It looks nice.

40 41 _____

Uncle Tom comes today.

42 43 _____

Wenn Du alle Aufgaben gelöst hast, dann sieh sie Dir noch einmal genau an. Vielleicht findest Du noch einen Fehler!

„Hamburger Englischtest HET 6+" von H. Fehlwelß, H. Hawa, E. Hylla und H. Schütt. Herausgegeben vom Deutschen Institut für internationale Pädagogische Forschung, Frankfurt/Main, in Zusammenarbeit mit dem Pädagogischen Institut der Universität Hamburg in der Reihe „Deutsche Schultests"
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Appendix III : The Verbal and Intelligence and Closure Tests

The tests are taken from Horn's Prüfsystem für Schul- und Bildungsberatung PSB (Horn, 1969). Columns 1 and 2 measure verbal intelligence, while Column 6 measures a closure factor.

1	2	3
Kleide	Naffia	Lappen
Teller	Attilo	Keller
Abvuhr	Misbel	Wintel
Flamme	Ndmtés	Mengen
Zettel	Vrlght	Mugel
Afrika	Gaisha	Sorge
Auvzug	Naudik	Lagen
Pulver	Nevton	Kugel
Heimat	Anstös	Harbei
Sdange	Budgot	Arbeit
Geweer	Amâtom	Gewürz
Penzin	Okolar	Sitte
Unsenn	Assuén	Zeigu
Bezirg	Bizebs	Deufel
Disdel	Dnjebr	Bahme
Insegt	Hamgar	Petite
Ardist	Neppoh	Tiefe
Jeguar	Gheops	Zucker
Exporé	Nefrat	Jenju
Gewürs	Virkil	Bramse
Plakad	Karbit	Sekte
Latein	Afarad	Unfall
Magnet	Chöpen	Sarbe
Hängst	Alippo	Schels
Banbus	Zikion	Pulver
Bästle	Theban	Sesse
Gestüd	Dtdkom	Helfte
Gasino	Kfipta	Werkzi
Jasmim	Limphe	Mudsch
Edappe	Dattie	Bumbe
Alaske	Hönwed	Nädse
Munaco	Gramde	Balzin
Sehara	Kuebec	Ursel
Nelsom	Tressl	Urlaub
Tiskus	Osbeke	Störch
Rikrut	Prokob	Sarkse
Panema	Dvorek	Akkor
Ghemie	Oslres	Mikro
Attäst	Läslom	Sibra
Stalum	Lootse	Sieb
Teifun	Druite	
Kummis	Sadier	
Phisik	Gounot	
Helium	Knesen	
Ratium	Pfarus	

Appendix IV : Additional Statistical Material on the Seventh Classes

Tables

a Correlations between stimuli scales computed for non-omission errors (seventh classes)

b Correlations between stimuli scales computed for omission errors (seventh classes)

c Correlations between target scales computed for non-omission errors (seventh classes)

d Correlations between target scales computed for omission errors (seventh classes)

The following tables should be read in conjunction with the discussion in Sections 10.9., 10.9.1., and 10.9.2.

Table a

Correlations between Stimuli Scales computed for Non-omission Errors (Seventh Classes)

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7	Scale 8
Scale 1	1.0000 (0) S=0.001	0.2956 (112) S=0.001	0.2045 (112) S=0.015	0.5518 (112) S=0.001	-0.0034 (112) S=0.486	0.6340 (112) S=0.001	0.2359 (112) S=0.006	0.5921 (112) S=0.001
Scale 2	0.2956 (112) S=0.001	1.0000 (0) S=0.001	0.4318 (112) S=0.001	0.1255 (112) S=0.094	0.0547 (112) S=0.284	0.4951 (112) S=0.001	0.8346 (112) S=0.001	0.1176 (112) S=0.108
Scale 3	0.2045 (112) S=0.015	0.4318 (112) S=0.001	1.0000 (0) S=0.001	0.8460 (112) S=0.001	0.4228 (112) S=0.001	0.8485 (112) S=0.001	0.5806 (112) S=0.001	0.7762 (112) S=0.001
Scale 4	0.5518 (112) S=0.001	0.1255 (112) S=0.094	0.8460 (112) S=0.001	1.0000 (0) S=0.001	0.3676 (112) S=0.001	0.8876 (112) S=0.001	0.3038 (112) S=0.001	0.9582 (112) S=0.001
Scale 5	-0.0034 (112) S=0.486	0.0547 (112) S=0.284	0.4228 (112) S=0.001	0.3676 (112) S=0.001	1.0000 (0) S=0.001	0.0969 (112) S=0.155	0.5957 (112) S=0.001	0.0863 (112) S=0.183
Scale 6	0.6340 (112) S=0.001	0.4951 (112) S=0.001	0.8485 (112) S=0.001	0.8876 (112) S=0.001	0.0969 (112) S=0.155	1.0000 (0) S=0.001	0.4518 (112) S=0.001	0.9210 (112) S=0.001
Scale 7	0.2359 (112) S=0.006	0.8346 (112) S=0.001	0.5806 (112) S=0.001	0.3038 (112) S=0.001	0.5957 (112) S=0.001	0.4518 (112) S=0.001	1.0000 (0) S=0.001	0.1422 (112) S=0.067
Scale 8	0.5921 (112) S=0.001	0.1176 (112) S=0.108	0.7762 (112) S=0.001	0.9582 (112) S=0.001	0.0863 (112) S=0.183	0.9210 (112)1 S=0.001	0.1422 (112) S=0.067	1.0000 (0) S=0.001

Table b

Correlations between Stimuli Scales computed for Omission Errors (Seventh Classes)

	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7	Scale 8
Scale 1	1.0000 (0) S=0.001	0.3108 (112) S=0.001	0.6655 (112) S=0.001	0.8275 (112) S=0.001	0.4414 (112) S=0.001	0.8090 (112) S=0.001	0.4894 (112) S=0.001	0.8204 (112) S=0.001
Scale 2	0.3108 (112) S=0.001	1.0000 (0) S=0.001	0.5470 (112) S=0.001	0.3935 (112) S=0.001	0.1625 (112) S=0.043	0.5285 (112) S=0.001	0.7849 (112) S=0.001	0.3977 (112) S=0.001
Scale 3	0.6655 (112) S=0.001	0.5470 (112) S=0.001	1.0000 (0) S=0.001	0.9576 (112) S=0.001	0.5061 (112) S=0.001	0.9670 (112) S=0.001	0.6913 (112) S=0.001	0.9502 (112) S=0.001
Scale 4	0.8275 (112) S=0.001	0.3935 (112) S=0.001	0.9576 (112) S=0.001	1.0000 (0) S=0.001	0.5372 (112) S=0.001	0.9800 (112) S=0.001	0.6060 (112) S=0.001	0.9909 (112) S=0.001
Scale 5	0.4414 (112) S=0.001	0.1625 (112) S=0.043	0.5061 (112) S=0.001	0.5372 (112) S=0.001	1.0000 (0) S=0.001	0.4136 (112) S=0.001	0.7389 (112) S=0.001	0.4188 (112) S=0.001
Scale 6	0.8090 (112) S=0.001	0.5285 (112) S=0.001	0.9670 (112) S=0.001	0.9800 (112) S=0.001	0.4136 (112) S=0.001	1.0000 (0) S=0.001	0.6206 (112) S=0.001	0.9891 (112) S=0.001
Scale 7	0.4894 (112) S=0.001	0.7849 (112) S=0.001	0.6913 (112) S=0.001	0.6060 (112) S=0.001	0.7389 (112) S=0.001	0.6206 (112) S=0.001	1.0000 (0) S=0.001	0.5346 (112) S=0.001
Scale 8	0.8204 (112) S=0.001	0.3977 (112) S=0.001	0.9502 (112) S=0.001	0.9909 (112) S=0.001	0.4188 (112) S=0.001	0.9891 (112) S=0.001	0.5346 (112) S=0.001	1.0000 (0) S=0.001

Table c

Correlations between Target Scales computed for Non-omission Errors (Seventh Classes)

	Scale 9	Scale 10	Scale 11	Scale 12	Scale 13	Scale 14	Scale 15
Scale 9	1.0000 (0) S=0.001	0.1321 (112) S=0.082	0.3629 (112) S=0.001	0.5313 (112) S=0.001	0.6459 (112) S=0.001	0.6838 (112) S=0.001	0.6338 (112) S=0.001
Scale 10	0.1321 (112) S=0.082	1.0000 (0) S=0.001	0.8601 (112) S=0.001	0.4828 (112) S=0.001	0.4934 (112) S=0.001	0.4944 (112) S=0.001	0.5892 (112) S=0.001
Scale 11	0.3629 (112) S=0.001	0.0601 (112) S=0.001	1.0000 (0) S=0.001	0.5335 (112) S=0.001	0.5719 (112) S=0.001	0.5999 (112) S=0.001	0.6306 (112) S=0.001
Scale 12	0.5313 (112) S=0.001	0.4828 (112) (S=0.001	0.5335 (112) S=0.001	1.0000 (0) S=0.001	0.0401 (112) S=0.337	0.2635 (112) S=0.003	0.8079 (112) S=0.001
Scale 13	0.6459 (112) S=0.001	0.4934 (112) S=0.001	0.5719 (112) S=0.001	0.0401 (112) S=0.337	1.0000 (0) S=0.001	0.8442 (112) S=0.001	0.3937 (112) S=0.001
Scale 14	0.6838 (112) S=0.001	0.4944 (112) S=0.001	0.5999 (112) S=0.001	0.2635 (112) S=0.003	0.8442 (112) S=0.001	1.0000 (0) S=0.001	0.2892 (112) S=0.001
Scale 15	0.6338 (112) S=0.001	0.5892 (112) S=0.001	0.6306 (112) S=0.001	0.8079 (112) S=0.001	0.3937 (112) S=0.001	0.2892 (112) S=0.001	1.0000 (0) S=0.001

Table d

Correlations between Target Scales computed for Omission Errors (Seventh Classes)

	Scale 9	Scale 10	Scale 11	Scale 12	Scale 13	Scale 14	Scale 15
Scale 9	1.0000 (0) S= 0.001	0.8368 (112) S=0.001	0.7489 (112) S=0.001	0.8458 (112) S=0.001	0.8846 (112) S=0.001	0.8374 (112) S=0.001	0.9099 (112) S=0.001
Scale 10	0.8368 (112) S=0.001	1.0000 (0) S=0.001	0.9346 (112) S=0.001	0.8879 (112) S=0.001	0.8574 (112) S=0.001	0.8605 (112) S=0.001	0.7365 (112) S=0.001
Scale 11	0.7489 (112) S=0.001	0.9346 (112) S=0.001	1.0000 (0) S=0.001	0.7710 (112) S=0.001	0.8768 (112) S=0.001	0.8962 (112) S=0.001	0.7837 (112) S=0.001
Scale 12	0.8458 (112) S=0.001	0.8879 (112) S=0.001	0.7710 (112) S=0.001	1.0000 (0) S=0.001	0.8888 (112) S=0.001	0.7245 (112) S=0.001	0.8781 (112) S=0.001
Scale 13	0.8846 (112) S=0.001	0.8574 (112) S=0.001	0.8768 (112) S=0.001	0.8888 (112) S=0.001	1.0000 (0) S=0.001	0.9383 (112) S=0.001	0.8447 (112) S=0.001
Scale 14	0.8374 (112) S=0.001	0.8605 (112) S=0.001	0.8962 (112) S=0.001	0.7245 (112) S=0.001	0.9383 (112) S=0.001	1.0000 (0) S=0.001	0.7232 (112) S=0.001
Scale 15	0.9099 (112) S=0.001	0.7365 (112) S=0.001	0.7837 (112) S=0.001	0.8781 (112) S=0.001	0.8447 (112) S=0.001	0.7232 (112) S=0.001	1.0000 (01) S=0.001

Appendix V : Learner Responses in the Pilot Studies

1. Learner Utterances in an Elicitation Test with a Translation Stimulus

2. The Fill-In Elicitation Test without a Translation Stimulus

3. Learner Utterances in the Fill-In Test

1. Learner Utterances in an Elicitation Test with a Translation Stimulus

The oral translation test described in Section 10.1. was administered to a seventh and ninth class in two Hauptschulen in Hagen. The responses of the ninth class (N=29) to the stimulus sentence Die Eltern gehen nicht jeden Tag ins Kino and the accompanying picture were as follows:

The parents aren`t go every day in cinema.
The parents doesn`t went every day in the cinema.
The parents didn`t go every day in the cinema.
The parent didn`t go every day to the cinema.
Every Day the parents go not to the cinema.
The parents didn`t to go to the cinema every day.
The parents didn`t walk every day in the cinema.
The parents aren`t going all day in the cinema.
The parents go not every day to cinema.
The parents didn`t going to the cinema.
The parents aren`t going in the cinema every day.
The parents don`t go to the cinema every day.
The parents don`t walk every day to the cinema.
The parents don`t went every day at the cinema.
The parents didn`t go in the cinema everyday.
The parents didn`t go every day in the cinema.
The parents didn`t go to the cinema every day.
The parents didn`t going to the cinema.
The parents doesn`t go in the cinema every day.
The parents won`t go every day to the cinema.
The parents didn`t go every day to the cinema.

Every day the parents doesn`t go to cinema.
The parents don`t go in the cinema every day.
The parents go not every day in the cinema.
The parents aren`t go in the cinema every day.
Every day the parents don`t went to the cinema.
All day the parents go not in the cinema.

In the seventh class (N = 25) responses to the same stimulus were as follows:

The parents going not the day to the cinema.
The parents goes not today in the cinema.
The parents go not every day to the cinema.
Today the parent weren`t going to cinema.
The parents going not every day in the cinema.
The parents going not daily to the cinema.
The ------ going not every day in the cinema.
My parents will not go every day to the cinema.
The parents are not going every day in the cinema.
The ------ going to not to cinema.
The ------ don`t go Every day to the cinema.
The Eltern don`t Every day at the cinema.
The parents going not ------ in the cinerna.
The parents got not every today in the cinema.
The pier goes not every day in the cinemas.
The parents go not every day in the cinema.

The ------ goes not every day in the cinema.
The ------ goes not all day in the cinema.
The ------ don`t go every day in the cinema.
The (Eltern) aren`t going not every day to the cinema.

The parents aren`t going daily to the cinema.
The parents dosn`t go to cinema every day.
The Eltern not go every day into the cinema.[1]

1) The learners` spelling and punctuation has been retained.
------ indicates a gap, an indicipherable form or an omitted answer.

2. The Fill-In Elicitation Test without a Translation Stimulus

Name: _____ Vorname: _____

Klasse: _____ Schule: _____ Datum: _____

Einführungsbeispiel:

Joan and Peter usually

_____

to the bus stop

but

today they

_____

to the bus stop.

(benutze eine Form von "to hurry"!)

Einführungsbeispiel:

Tomorrow Joan and Peter

_____

to the bus stop

but

now they

_____

to the bus stop.

(benutze eine Form von "to hurry"!)

The teachers

_____

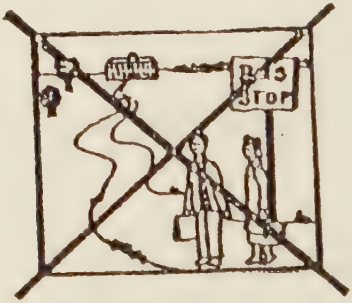
for the bus yesterday morning

but

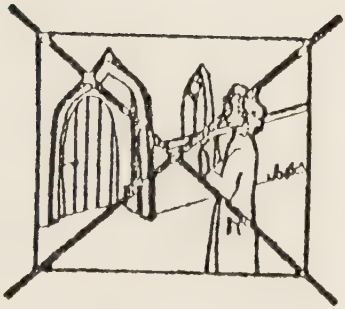
they

_____

for the bus yesterday evening.



(benutze eine Form von "to wait"!)



Last week Joan

_____

to church

but

yesterday she

_____

to church.

(benutze eine Form von "to go"!)

Tomorrow Joan and Peter

_____

to the bus stop

but

now they

_____

to the bus stop.

(benutze eine Form von "to hurry"!)

The brothers

_____

any apples yesterday morning

but

yesterday afternoon they

_____

some apples.

(benutze eine Form von "to buy"!)

Joan and Peter usually

_____

to the bus stop

but

today they

_____

to the bus stop.

(benutze eine Form von "to hurry"!)

Last month Johnny

_____

to the lake

but

last week he

_____

to the lake.

(benutze eine Form von "to walk"!)

The boys

_____

in the church the week before last

but

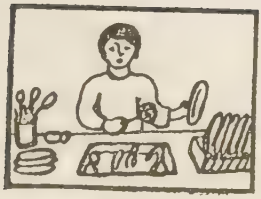
last week they

_____

in the church.

(benutze eine Form von "to sing"!)

Last Sunday father



_____

the dishes

but

yesterday evening he

_____

the dishes.

(benutze eine Form von "to wash"!)

3. Learner Utterances in the Fill-In Test

The test given in Section 2 of this appendix was adiministered to the ninth class of a Hauptschule in Hagen (N = 28). To achieve a counterbalanced design two variants of the test were used. Learner responses to those parts of the last two questions where an auxiliary was expected as part of the correct answer were as follows (slight differences in the form of the sentences outside of the verb phrase are the result of the two variants of the test):

The teachers wait not for the bus yesterday morning...

The teachers aren`t waiting for the bus yesterday morning
yesterday afternoon they not buying any apples

The teachers don`t wait for the bus yesterday morning
yesterday afternoon they don`t buy any apples

The teachers aren`t waiting for the bus yesterday morning
yesterday afternoon they aren`t buy any apples

The teachers don`t wait for the bus yesterday
yesterday afternoon they didn`t bought any apples

The teachers wasn`t waiting for the bus yesterday
yesterday afternoon they didn`t bought any apples

The teachers didn`t waiting for the bus yesterday morning
yesterday afternoon they didn`t buy any apples

The teachers aren`t waiting for the bus yesterday morning
yesterday afternoon they aren`t bought any apples

The teachers mustn`t wait for the bus yesterday morning
yesterday afternoon they didn`t bought any apples

The teachers waited for the bus yesterday morning

The teachers aren`t waited for the bus yesterday morning
yesterday afternoon they didn`t bought any apples

The teachers are waiting for the bus yesterday morning

The teachers aren`t wait for the bus yesterday morning
yesterday afternoon they didn`t buyed any apples

The teachers didn`t wait for the bus yesterday morning
yesterday afternoon they didn`t buy any apples

The teachers doesn`t wait for the bus yesterday evening
yesterday afternoon they doesn`t bought any apples

they didn`t wait for the bus yesterday evening
The brothers didn`t buy any apples yesterday morning

they won`t wait for the bus yesterday evening

---

they didn`t wait for the bus yesterday evening
The brothers didn`t bought any apples yesterday morning

The brothers bought not any apples yesterday morning

they didn`t wait for the bus yesterday evening
The brothers didn`t buy any apples yesterday morning

they don`t waiting for the bus yesterday evening
The brothers won`t buy any apples yesterday morning

they aren`t waiting for the bus yesterday evening
The brothers didn`t buy any apples yesterday

they waits for the bus yesterday evening
The brothers aren`t bought any apples yesterday morning

they weren`t waiting for the bus yesterday evening
The brothers didn`t buy any apples yesterday morning

they didn`t wait for the bus yesterday evening
The brothers didn`t bought any apples yesterday morning

they waiting for the bus yesterday evening
The brothers aren`t buying any apples yesterday morning

they aren`t waiting for the bus yesterday evening
The brothers don`t bought any apples yesterday morning

they don`t wait for the bus yesterday evening
The brothers don`t bought any apples yesterday morning

The teachers won`t wait for the bus yesterday morning
yesterday afternoon they won`t bought any apples

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